

Joint Committee
on Climate Change

TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD) APPLICATION GUIDE FOR MALAYSIAN FINANCIAL INSTITUTIONS

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INTRODUCTION

Purpose and Background

Purpose and benefit of TCFD Recommendations: The Financial Stability Board ("FSB") established the Task Force on Climate-related Financial Disclosures ("TCFD") to develop recommendations for more effective climate-related disclosures to facilitate more informed financial and business decision-making in addressing climate-related risks and opportunities. Enhanced disclosures would enable stakeholders to better understand and assess companies' exposure to and management of climate-related risks in a transparent and consistent manner. Among the benefits of implementing the TCFD Recommendations include:

(i) easier or better access to capital driven by increased investors' and financiers' confidence,
(ii) more effectively fulfilling existing disclosure requirements pertaining to reporting of material information in financial filings, and
(iii) better understanding as well as management of material risks that revolve around climate change in a more strategic and comprehensive manner.

Challenges of implementing TCFD Recommendations and recent key developments: The number of TCFD supporters has grown from 237 at the end of 2017[1] to over 2,600 supporters as of October 2021, of which 1,069 are financial institutions.[2] However, despite this growing number of supporters, not all supporters are able to align their disclosures to the TCFD Recommendations. In this regard, several challenges in implementing the said Recommendations have been highlighted in TCFD's 2021 Status Report, including (but not limited to):

(i) Challenges throughout the process of conducting financial impact analysis, starting from organizational alignment and support through data acquirement, attribution of risks and opportunities, and estimation of potential impacts.
(ii) Challenges to secure buy-in to disclose the results of financial impact analyses considering reliability of data, litigation of risk, and competitive disadvantage.

Similarly, a survey on ESG readiness in the Malaysian banking sector indicates that the top challenges of embedding ESG factors into risk assessments are low quality customer disclosures and ESG awareness, as well as limited access to counterparty data[3].

The challenges above can result in inaccurate assessment of climate risk profiles and ineffective formulation of climate strategy across financial institutions. Notwithstanding such challenges, the TCFD encourages businesses to adopt a stepwise approach to disclosure rather than opting not to disclose. Financial institutions may consider disclosing general, qualitative information as a start and then progress towards more specific, quantitative data and information over time.[4]

According to the Climate Risk Disclosure Barometer 2020 Malaysia, which assessed the coverage as well as quality of climate risk disclosures (benchmarked against TCFD Recommendations) of the Malaysian financial services sector, financial institutions in Malaysia consistently lagged behind the global industry average. For instance, financial institutions in Malaysia scored an average of 20% for coverage of Governance-related aspects as compared to the global industry average of 54%. In terms of quality of disclosures, they achieved an average score of just 4% for Governance as compared to a global industry average of 26%.[5] These findings re-affirm a similar assessment of climate-related

[1] https://assets.bbhub.io/company/sites/60/2020/10/FINAL-2018-TCFD-Status-Report-092518.pdf

[2] TCFD supporters denote that an organisation believes the recommendations provide a useful framework to increase transparency on climate-related risks and opportunities within financial markets. For companies, support is a commitment to work toward their own implementation of the TCFD recommendations. https://www.fsb.org/wp-content/uploads/P141021-1.pdf

[3] https://www.pwc.com/my/en/publications/2021/accelerating-esg-integration-in-malaysian-banks.html

[4] https://www.ey.com/en_gl/financial-services-technical-resources/task-force-on-climate-related-financial-disclosures-report-playbook and https://www.fsb.org/2020/10/2020-status-report-task-force-on-climate-related-financial-disclosures/

[5] Coverage: a score of 100% indicates that the company has addressed all the recommendations. Quality: A score of 100% indicates that the company had adopted all the recommendations and the quality of the disclosure met all the requirements of the TCFD (i.e. gaining a maximum score of 5 for each of the 11 recommendations).
https://assets.ey.com/content/dam/ey-sites/ey-com/en_my/topics/climate-change/ey-climate-risk-disclosure-barometer.pdf

disclosures made by Malaysian financial institutions undertaken by JC3 Sub-Committee 2 in 2020. Clearly, there is a pressing need for practical guidance on climate-related disclosures for the industry. [6]

On a related development, Bank Negara Malaysia ("BNM") is currently developing a set of guidelines for climate risk management as well as climate scenario analysis to further facilitate TCFD-aligned disclosures by Malaysian financial institutions. On the part of the practitioners, 64% Malaysian banks have indicated plans to adopt TCFD in the next 2 years.[7]

It is worth noting that recent key developments around particular aspects of climate-related disclosures warranting further guidance have also motivated the proposed guidance laid out in this Guide. For instance, The Global Carbon Accounting Standard, developed by the Partnership for Carbon Accounting Financials ("PCAF"), has proposed a set financed emissions-related metrics for financial institutions (e.g. those pertaining to climate-related metrics including developments that inform the circumstances in which Scope 3 emissions disclosures are appropriate).

Separately, the IFRS Foundation announced the formation of an International Sustainability Standards Board ("ISSB") in November 2021 to develop a baseline global sustainability reporting standard, building on the foundation of the widely accepted TCFD Recommendations and the work of an alliance of sustainability standard setters. On its part, the TCFD has also published Guidance on Metrics, Targets and Transition Plans to support preparers in disclosing decision-useful information and linking those disclosures with estimates of financial impacts.

Purpose and context of JC3 application guide: Recognising the urgency for financial institutions in Malaysia to accelerate efforts to manage climate-related risks as well as opportunities, this application Guide forms part of a broader range of JC3 initiatives to support the progressive implementation of climate-related disclosures that are aligned with TCFD Recommendations. Drawing reference from a selection of good practices adopted by financial institutions who are regarded as leading peers in this space globally as well as drawing upon related studies and surveys, the Guide was developed by the Malaysian financial industry within the context of the Malaysian economy and financial system. The primary underlying aim is to support financial institutions who are stepping up efforts to implement the TCFD Recommendations in phases beginning 2022.

This "by practitioner, for practitioner" Guide outlines key recommendations supplemented by the relevant descriptions, guidance notes, considerations and examples that could be utilised as practical resources to help financial institutions improve their disclosures. Most recommendations made are applicable / relevant to a range of financial institutions (e.g. banks, insurers/takaful operators, asset managers/owners). As for recommendations that are more sub-sector specific, financial institutions should refer to the corresponding TCFD Supplemental Guidance for Banks, Insurance Companies, Asset Owners and Asset Managers, as deemed appropriate.

The Guide is intended to be a supplement to the guidance provided by the TCFD and to be read alongside other relevant/applicable guidance and/or requirements be it jurisdiction-specific or otherwise (e.g. Bursa Malaysia's Sustainability Reporting Guide, Value-based Intermediation ("VBI") related documents[8] by Bank Negara Malaysia and VBI Community of Practitioners, etc). The Guide is not intended to promote stand-alone climate reporting, and financial institutions are encouraged to incorporate climate-related data into their reporting alongside other financial and non-financial data as deemed appropriate. This Guide is also adapted to the context of financial institutions in Malaysia, taking into consideration varying sizes, complexity, maturity, appetite, and practices. For instance, examples of local and international practices are given to account for different levels of maturity and readiness of financial institutions to disclose as per TCFD's Recommendations. Global practices would serve as a benchmark for Malaysian financial institutions aspiring for a more robust level of climate governance and disclosure.

[6] https://assets.ey.com/content/dam/ey-sites/ey-com/en_my/topics/climate-change/ey-climate-risk-disclosure-barometer.pdf
[7] https://www.pwc.com/my/en/publications/2021/accelerating-esg-integration-in-malaysian-banks.html
[8] Access VBI related documents through www.aibim.com

It is worth noting that, as an extension of this initiative, disclosure guides for Malaysian businesses will be developed in 2022.

Applicability: As climate change is a material source of risk that could pose significant threats to the stability of our financial markets and economy, supervised financial institutions are expected to integrate climate-related risks and considerations into their governance framework arrangement, organisational structure, business strategies, corporate planning and risk management practices. In the effort to promote transparency through progressive disclosure of climate-related risks and information in line with the TCFD Recommendations, this Guide is developed as a source of reference for financial institutions and, in particular, those supervised by Bank Negara Malaysia and Securities Commission Malaysia. The Guide is designed for the following financial institutions (local & foreign):

1. Commercial banks
2. Islamic banks
3. Investment banks
4. Development financial institutions
5. Insurance and reinsurance companies
6. Takaful and retakaful operators
7. Fund management companies
8. Institutional investors

In addition, this document can be used as a reference by other entities to guide their climate-related measures and disclosures including preparers as well as users of climate-related disclosures such as rating agencies, research houses, etc.

Please note that, given the rapid pace of development of best practices as well as accompanying disclosures pertaining to the effective management of climate-related risks & opportunities, the Application Guide is expected to evolve in tandem especially via the incorporation of the latest advances and examples.

Phases of implementation: Financial institutions, particularly in developing and emerging markets, are typically in the preliminary stages of producing scientifically informed, meaningful climate-related financial disclosures. In the area of climate-related reporting, methodologies and best practices are rapidly changing. As a result, a flexible approach is needed. Once initial climate-related reporting is published, financial institutions are encouraged to continue enhancing their disclosures in line with the TCFD Recommendations to facilitate more effective assessment, comprehension and decision-making by key stakeholders.

As an illustrative implementation path,[9] financial institutions in Malaysia would begin publicly disclosing climate-related considerations (e.g. within their annual report or sustainability report) and also start to view climate-related risks and opportunities as mainstream business and investment considerations. As adoption of the TCFD Recommendations increases as a consequence of increasingly facilitative yet stringent regulatory policies, collaborative industry-wide initiatives as well as increasingly persistent investor activism, financial institutions would disclose more robust technical information (e.g. various relevant metrics & targets and scenario analysis undertaken) with greater maturity and within appropriate context.

With more complete, consistent, and comparable information for market participants, there will be increased market transparency and credible pricing of climate related-risks and opportunities. This will eventually lead to better management of climate risks and opportunities within and across the entire financial ecosystem. Financial institutions are then encouraged to innovate and further enhance climate-related initiatives beyond the TCFD Recommendations.

Notwithstanding the intention to preserve the inherent flexibility that underpins the TCFD Recommendations, it may be helpful to provide an indicative timeframe for adoption of certain recommendations contained within this Application

[9] https://assets.bbhub.io/company/sites/60/2020/10/TCFD_Booklet_FNL_Digital_March-2020.pdf

Guide. Setting such a timeframe may aid financial institutions, especially those who are at the initial stages of adoption, in terms of guiding the rollout of their respective strategic implementation plans vis-à-vis TFCD Recommendations.

After having considered the distinctive nature of each disclosure recommendation (including the underlying policies, processes and practices that need to be established to facilitate such disclosures, where applicable), the recommended timeframe for implementation of all Basic Recommendations is within a period of up to 24 months. Put simply, for a financial institution that has yet to address any of the recommendations made, the assumption is that all Basic Recommendations could be adopted within 24 months.

As Stretch Recommendations are linked to more sophisticated underlying practices, their adoption should be dependent upon a financial institution's overall climate risk exposure and/or complexity of operations. Hence, each financial institution is expected to conduct their own assessment on the extent to which they should adopt Stretch Recommendations and the corresponding timeframe for implementation.

Acknowledgement: The Guide was prepared by the JC3 Sub Committee 2 on Governance & Disclosures as well as other supporting institutions comprising:

Allianz Malaysia Berhad
Bank Negara Malaysia
BNP Paribas Asset Management Malaysia
Bursa Malaysia
CIMB Bank Berhad
Hong Leong Bank Berhad
Institutional Investors Council Malaysia
Kumpulan Wang Persaraan (Diperbadankan)
Malayan Banking Berhad
PricewaterhouseCoopers Risk Services Sdn Bhd
RAM Sustainability
Securities Commission Malaysia
United Overseas Bank (Malaysia) Bhd
WWF-Malaysia
Zurich (Insurance and Takaful), Malaysia

GOVERNANCE

Within a financial institution's framework, climate governance represents policies, roles, responsibilities and decision-making that are associated with managing climate-related risks and opportunities. Governance disclosures form an integral part of an institution's climate-related commitments and how it will achieve them explicitly, by describing the oversight role of the board, as well as management's role in relation to climate risks and opportunities.

TCFD encourages companies to disclose their climate governance through a phased approach. In the early phase, financial institutions may disclose foundational elements such as the board's oversight and management's role in assessing and managing climate-related issues, showcase the boards' sustainability credentials, and disclose capacity building conducted for board members and management on sustainability.

In the next phase, financial institutions may consider disclosing climate-related topics discussed during board meetings, the setting up of a separate committee on climate-related matters and integrating sustainability with key performance indicators (KPIs) of the board and top management.

The Implementation Guide presents two phases (Basic and Stretch) as follows:

A. BASIC

Recommendation G1: **Board Oversight of Sustainability and Climate-related Matters**	
Description	Disclose nature of Board oversight and accountability with respect to sustainability and climate-related matters, risks and opportunities.
Guidance Notes	Businesses have been facing calls from shareholders and stakeholders to proactively manage environmental, social and governance (ESG) matters, including climate-related risks and opportunities. Financial institutions, in particular, need to demonstrate how sustainability and climate change considerations are integrated into the Board's strategic decision-making process, along with risk management frameworks, and financial planning. Board oversight and accountability are crucial to driving long-term value creation and building trust. It is important to disclose where the primary responsibility at the Board level for sustainability issues including climate-related matters resides, for example, whether it is with the board as a whole, or with a specific Board-level committee or sub-committee. The Malaysian Code on Corporate Governance (MCCG) emphasizes that effective board leadership and oversight require the integration of sustainability considerations into corporate strategy, governance and decision making; and a well-articulated long-term strategy as well as a clear plan on sustainability including supporting the global transition to a net-zero economy will distinguish themselves by building the confidence of the stakeholders.
Key Considerations	1. Who has oversight responsibility of sustainability issues, including climate-related matters? 2. Does the Board have a clear view of sustainability and climate-related risks and opportunities, and how these are integrated into long-term strategic planning? 3. In the case of a company group, has the assessment of material sustainability and climate-related risks and opportunities been considered from a group-wide perspective? 4. How is the Board apprised of sustainability/climate-related matters? 5. How frequently does the Board convene meetings to deal with sustainability-linked topics including climate-related matters?

	6. How does the board monitor and oversee progress against goals and targets for addressing climate-related issues? *Note: For relevant example(s), please refer to Appendix A.*

Recommendation G2: **Sustainability Governance Structure Including Climate-Related Matters at the Management Level**	
Description	Disclose management-level sustainability governance structure as well as processes for sustainability and climate-related matters, including accountability, responsibility, and decision-making.
Guidance Notes	Financial institutions should set out the structures as well as processes to ensure sustainability-related (including climate-related) risks and opportunities can be identified, monitored, assessed and managed in a timely and effective manner. In order to do this, there is a need for clear roles and responsibilities defined at the relevant management level(s) and business units, including risk management, corporate strategy, finance, audit and others. Relevant reporting lines for sustainability and climate matters within the institution should be disclosed, including reporting to the ultimate oversight body.
Key Considerations	1. What are the roles and responsibilities of the management at various levels in integrating sustainability and climate-related matters into business strategies and processes? Who are the various parties involved, and how are they measured and managed to ensure alignment? 2. What are the processes for reviewing climate-related risk management and policies, managing sustainability matters including climate-related considerations, both from the risk as well as opportunity perspectives? 3. How does the financial institution measure, manage and monitor the progress / implementation of sustainability as well as climate-related initiatives, e.g. through appropriate metrics and/or against pre-set goals / targets? *Note: For relevant example(s), please refer to Appendix A.*

Recommendation G3: **Sustainability and Climate-related Board Credentials**	
Description	Disclose sustainability and climate-related credentials, experience and individual biographies for Board members.
Guidance Notes	The Board plays critical role in driving long-term shareholder value, ensuring ESG risks and trends are integrated into business strategy. This would mean that Board members need to have the knowledge and competencies to oversee the identification, monitoring and management of material sustainability and climate-related issues. Board members' sustainability as well as climate-related skills, proficiencies, and experience should be disclosed, to instil confidence and as a signal that the financial institution is taking its material sustainability-related matters seriously.
Key Considerations	1. Does the board possess the relevant knowledge, expertise and experience pertaining to sustainability as well as climate-related matters?

	2. Are ESG skills included as part of the Board skills matrix, and aligned with long-term business strategy? Are the skills of each director, including ESG-related proficiencies disclosed? 3. Is the Board taking proactive measures to promote the diversity of skills and experience of the Board, both in existing Board members and when considering new Board members? 4. Who is responsible for evaluating sustainability competency on the Board? *Note: For relevant example(s), please refer to Appendix A.*

Recommendation G4: **Sustainability and Climate-Related Training**	
Description	Disclose the initiatives undertaken and training programmes conducted annually to build capacity of Board members and management on sustainability issues including climate-related matters.
Guidance Notes	Continuous learning and on-going training programmes are crucial to equip the Board with cutting-edge knowledge and to help them keep abreast with changes in sustainability and climate-related developments, including climate science and regulatory changes. Board and senior management training should be regarded as a strategic priority for the financial institution. With comprehensive sustainability and climate-related learning programmes in place, the Board and management will be better able to manage sustainability and climate-related risks and opportunities faced by the institution.
Key Considerations	1. Does the financial institution have continuous learning programmes in place for the Board and senior management? 2. Does the financial institution disclose the focus areas of the training programmes conducted? 3. What are the specific sustainability and climate-related training programmes conducted for the Board and senior management? 4. Do the sustainability training programmes include practical exposures such as site visits, case studies and knowledge sharing sessions by other companies? *Note: For relevant example(s), please refer to Appendix A.*

Recommendation G5: **Sustainability and Climate-related Discussions in Board Meetings**	
Description	Disclose the frequency of Board meetings per year in which sustainability and climate-related issues have been a substantive agenda item, and a summary of key climate-related issues and initiatives deliberated.
Guidance Notes	There is increasing expectation for Boards to be proactive in evaluating key sustainability risks and opportunities, including those related to climate change. Better transparency and consistent disclosures would aid investors to make informed investment decisions; and for rating agencies to more accurately evaluate material aspects of a financial institution's sustainability performance. There should be disclosure on the frequency of the Board discussions on sustainability, as well as disclosure on the specific issues discussed. Disclosing sustainability issues discussed during Board meetings is an opportunity for the Board to use transparency to promote more effective communication with its stakeholders.

Key Considerations	1. How frequently does the Board/Board committee discuss climate-related issues? 2. What are the key sustainability and climate-related matters that have been discussed and debated at the Board level? *Note: For relevant example(s), please refer to Appendix A.*

Recommendation G6: **Sustainability/Climate-linked Remuneration**	
Description	Link Board of Director (excluding independent directors) and top management remuneration to performance against specified sustainability and climate-related targets.
Guidance Notes	Based on United Nations Principles of Responsible Investment (UNPRI) recommendations, appropriate mechanisms and structures are needed to link remuneration to directors' (excluding independent directors) and top management performance to ensure long-term value creation. Specifically, directors' (excluding independent directors) and top management performance should be linked to sustainability and climate-related goals and/or metrics. Details of how remuneration is linked to climate-related initiatives should be disclosed. There are four key dimensions to consider when linking remuneration to climate-related goals and/or metrics, which are internal and external targets; how to keep track of and measure progress towards those goals; what time frames to use; and how to determine achievement of targets.[10] Sustainability linked remuneration can include KPIs in the relevant performance scorecards which form the basis of remuneration. Sustainability linked remuneration are applicable to management and Executive Directors. For clarity, this requirement is not applicable to independent directors and non-executive directors.
Key Considerations	1. Does the financial institution disclose its sustainability/climate-related goals/metrics for the Board and top management? 2. Does the financial institution disclose the implications of performance on sustainability/climate-related matters on remuneration for Board and top management? 3. What specific sustainability/climate-related goals/metrics have been adopted and over what time horizons? 4. How are these goals/metrics determined, and by whom? 5. How does the Board and top management monitor the progress towards achievement of established goals/metrics? *Note: For relevant example(s), please refer to Appendix A.*

B. STRETCH

Recommendation G7: **Separate Committee on Sustainability and Climate-related Matters**	
Description	Set up a separate committee to oversee sustainability-related matters, reporting to the Board of Directors for all sustainability and climate-related matters.

[10] https://www.pwc.com/gx/en/issues/reinventing-the-future/take-on-tomorrow/download/Linking-exec-pay-ESG.pdf

Guidance Notes	A dedicated Board committee for sustainability can provide better guidance and added focus on climate-related and other sustainability strategies. The committee can also steer and oversee complex strategies such as pivoting the financial institution's business towards a low carbon economy, while encouraging and assisting its clients and investees to do the same. The committee's roles and responsibilities should be clearly defined, and should include serving as a driver, critic, as well as knowledge centre of sustainability for the institution. The Board committee for sustainability should have a good proportion of independent directors, including directors with relevant sustainability competencies as well as experience. The board level committee is not necessarily required for each entity. The function can leverage a group-level committee, particularly for country level entities and for foreign FIs. The committee must be focused on sustainability, but can also have other related functions, such as governance.
Key Considerations	1. What are the objectives and scope of the Sustainability Committee and where does the committee sit within the financial institution's overall governance structure? 2. What are the roles and responsibilities of the Sustainability Committee? 3. What is the frequency of committee meetings? 4. How would the composition of the committee be decided, including diversity in terms of members' skillsets, viewpoints and input? *Note: For relevant example(s), please refer to Appendix A.*

STRATEGY

Financial institutions should describe and discuss how climate-related risks and opportunities are identified, assessed and managed. Disclosures relating to strategy should identify the type, extent/magnitude, and time scales of exposure to material climate issues, including possible outcomes/impacts of climate-related risks and opportunities. In doing so, the institutions should pay particular attention to providing visibility in terms of how business strategy, including financial planning and analysis, integrates responses to such risks and opportunities. Financial Institutions should also develop climate-resilient strategies, taking into account different climate scenarios including a 2°C or lower scenario.

Financial institutions should first identify the risks and opportunities related to climate, assess how those risks and opportunities affect their business model and performance, and disclose their strategy and risk appetite on climate risks. In the advanced level, financial institutions may perform climate scenario analysis to ensure climate alignment to their values and strategy.[11]

The Implementation Guide presents two phases (Basic and Stretch) as follows:

A. BASIC

Recommendation S1: **Identification of Climate-related Risks and Opportunities**	
Description	Review the financial institution's strategy to identify and disclose climate-related risks and opportunities over the short-, medium-, and long- term.
Guidance Notes	Financial institutions should identify material sustainability and climate-related risks as well as opportunities arising from their existing operations. In addition, any planned strategies and initiatives should be tested for climate resilience. In providing a more holistic picture, financial institutions may also explore on how climate related issues could have a material financial impact on the organisation and the interdependencies among the factors that affects the ability to create value over time. Plans and business outcomes that are not aligned with the relevant national policies and/or international agreements such as the Paris Agreement could potentially expose the institution to certain transition risks. As per TCFD Recommendations, specific time frames pertaining to key risks and opportunities depend on considerations such as the useful life of the institution's assets, and the distinctive natures of the climate-related risks based on sectors and geographies in which they operate.
Key Considerations	1. What climate-related risks and opportunities are material to the financial institution's operations and business goals over the short-, medium- and long-term? How did the financial institution identify such risks and opportunities? 2. Has the financial institution established or identified the relevant internal key risk indicators/measurements to monitor and trigger actions on/responses to climate-related risks and opportunities? Is there a policy and procedure in place for this? 3. Has the company considered or evaluated opportunities in creating sustainable financial products and services, based on trends in relation to sustainability and / or climate change? *Note: For relevant example(s), please refer to Appendix A.*

[11] https://www.fsb.org/wp-content/uploads/P291020-1.pdf

Recommendation S2: **Impact of Climate-related Risks and Opportunities**	
Description	Assess and disclose how climate-associated risks and opportunities could affect the financial institution's existing businesses, strategy, and financial planning.
Guidance Notes	It is important that financial institutions understand and disclose the impacts of climate-related risks and opportunities on their businesses, in terms of magnitude, timing and transmission mechanisms. Consequently, the company should embed sustainability and climate risk considerations into its overall enterprise risk management framework, utilising appropriate tools and metrics, for example the impacts of climate related issues on the financial performance and position to build resilience. The financial institution should adopt an institution-wide view of climate / environmental risk exposures, and there should be an internal process for reviewing, managing, and monitoring climate-related risks to ensure that appropriate and timely actions are taken to address them.
Key Considerations	1. How much effort and resources are required to manage climate-related risks and to pursue the opportunities identified? What skillsets are needed internally? 2. What external data or information is needed to assess climate-related risks and opportunities? 3. How often should risks and opportunities be evaluated/updated, given the rapid developments on both science and regulations in the area? 4. Is there a transition plan (or contingency plan) in place to manage/address the impacts identified? *Note: For relevant example(s), please refer to Appendix A.*

Recommendation S3: **Strategy and Risk Appetite on Climate Change Related Risks and Sustainability Measures**	
Description	Disclose strategy and appetite with regard to climate-related risks and opportunities, and the measures towards sustainability in the financial institution's business activities.
Guidance Notes	In the process of identifying material climate-related risks and opportunities, the institution should clearly define and disclose their risk appetite for taking on climate-related risks, how it differs from, and how it relates to their existing risk portfolio. The financial institution should ensure transparency when disclosing their position/efforts pertaining to climate-related risk management strategy and other sustainability-related matters that reflect their strategy and business activities. For example: (i) Acknowledging the existence of climate change issues and disclosing the institution's environmental impacts such as carbon footprint and energy use. (ii) Making clear commitments/pledges to demonstrate the institution's resolve in taking proactive measures to address climate issues, and how such commitments/pledges are translated into their overarching strategy and actions. (iii) If applicable, the description of how climate-related risks and opportunities are factored into relevant products/investment strategies, and how of the products and investment strategies might be affected by the transition to a low-carbon economy to various assets classes.

Key Considerations	1. Is the financial institution's stance on climate change/sustainability established and clearly defined within their Board Charter/Risk Appetite/Internal Policy and Procedures? 2. Are sustainability and climate change incorporated in the institution's vision and mission? 3. Are there institution-wide awareness programmes to cascade key strategies to the employees, including focus on ESG elements? *Note: For relevant example(s), please refer to Appendix A.*

B. STRETCH

Recommendation S4: **Scenario Analysis as an Opportunity to Improve Strategic Resilience and Explore Climate Vulnerabilities**	
Description	Perform climate-related scenario analysis to assess potential business implications of climate-related risks and opportunities over time and under different conditions as well as related strategy to manage these.
Guidance Notes	Effects of climate change are likely to emerge over the medium- to long-term, but with unknown timing and magnitude. This poses a major challenge to financial institutions in understanding the potential impacts to business strategies and financial performance. Climate-related scenario analysis allows financial institutions to explore a range of possible scenarios and develop an understanding of how various physical and transition risks and opportunities may impact business over various time periods. A scenario analysis should have the following characteristics: (i) ***Plausible*** – the event(s) should be possible and have a credible narrative. (ii) ***Distinctive*** – each scenario must focus on a different combination of key factors and should be clearly differentiated in structure, not variations on a single theme. Multiple scenarios should be used to explore how different permutations and/or temporal developments on the same key factors can yield different outcomes. (iii) ***Consistent*** – each scenario should have sound internal logic. The goal of scenario analysis is to explore the way differing combinations of factors interact, and each action should therefore entail a reaction. (iv) ***Relevant*** – each scenario, as well as set of scenarios taken as a whole, should contribute specific insights into the future, especially in relation to strategic and/or financial implications. (v) ***Challenging*** – each scenario should challenge conventional wisdom and simplistic assumptions about the future. It should explore alternatives that will significantly change the basis for business-as-usual assumptions. Credible scenarios require estimates of the future such as population, economic activity, governance structure, social values and technological advancements. These can serve as "meta-scenarios" to provide overall context and a set of macro trends, based on which specific scenarios can be developed. The financial institution should disclose clear time horizons for the management of climate-related risks and opportunities, including detailed milestones to show progress and to quantify business impacts. Further considerations:

	(i) There is a need to draw explicit linkages between time horizons and specific climate-related events and risks over each time horizon. These risks should have a material impact on the financial institution. (ii) The description must consider the weighted average life of the financial institution's portfolios as well as time horizons used in internal forecasts (e.g. deferred tax assets). (iii) The description must also consider the fact that certain physical climate impacts may manifest over medium and longer time horizons, while others may manifest over the short-term (or are already unfolding). Financial institutions are encouraged to consider the following categories of climate-related risks and opportunities when conducting scenario analysis (non-exhaustive): (i) Market and technology shifts. (ii) Reputational considerations. (iii) Policy, legal and regulatory environment. (iv) Physical (acute and chronic). A high-level view of the approach to be used when applying scenario analysis to climate-related risks and opportunities is as follows: (i) Ensure governance is in place. (ii) Assess materiality of climate-related risks to the company. (iii) Identify and define range of scenarios which includes a range of transition and physical risks that are relevant and material to the financial institution. (iv) Evaluate business impact. (v) Identify potential responses. (vi) Document and disclose key inputs, assumptions, analytical methods, outputs, potential management responses and communication to stakeholders and other relevant parties. Financial institutions are encouraged to disclose the process for selection and review of scenarios, as well as a of justification scenarios used, e.g. why the scenarios are applicable to the institution and how they are supported by business judgment. Disruptive non-linear scenarios should also be considered for inclusion. **1. Scenarios:** (i) Types of scenarios (e.g. based on International Energy Agency (IEA), Intergovernmental Panel on Climate Change (IPCC), Network for Greening the Financial System (NGFS), etc.). (ii) Description of scenario (e.g. in-house vs. industry collaboration). (iii) Source of scenario data e.g. available data provided by the National Hydraulic Research Institute of Malaysia (NAHRIM) on sea level rise, flood risk area etc. (iv) High-level outcomes by scenario. **2. Variables:** (i) Commentary on alignment with existing regulatory initiatives. **3. Assumptions and methodology:** (i) Description of key scenario assumptions. (ii) Description of segmentation methodology used across business segments. (iii) Correlation of climate risk variables (i.e. physical and transition risks) to macroeconomic variables. **4. Results:** (i) Firm-specific overlays, limitations and/or adjustments.

	(ii) Exposure by sector and/or geography at year-end by defined time horizons (short-, medium- and long-term). The financial institution should provide a report of qualitative and quantitative analysis undertaken as well as results obtained, together with the management implications and actions taken. The disclosure should comprise: (i) Whether physical and transition risks are considered separately or jointly, detailing possible interactions if possible. (ii) Results of scenario analysis/stress testing expressed in terms of earnings or value-at-risk under multiple climate scenarios, and in the context of financial commitments and recent year progress. (iii) Description of resiliency of business model and recent strategic decisions. (iv) Client/customer resilience considerations in stress test scenarios. (v) Firm-specific description of sector resilience through stress test scenarios, including relevant responses. (vi) Investment/ lending portfolio (or asset level) performance under selected scenarios. Other potential disclosures: (i) Prioritisation framework for managing climate initiatives. (ii) Climate risks of different sectors in the portfolio under different climate scenarios. (iii) Climate-related risks and opportunities by business segment or geographical region.
Key Considerations	1. What are the various relevant scenarios that are readily available? E.g. scenarios developed by International Energy Agency (IEA) and Intergovernmental Panel on Climate Change (IPCC) could be used to assess future vulnerability to climate change. 2. What is the nature of climate related risk and opportunities faced by the financial institution? E.g. climate change impacts may vary significantly depending on industry, value chain position, customers, stakeholders, geography and/or economic sectors. 3. How might the scenario analysis results be used by investors and other stakeholders? E.g. investors may use them to consider potential investments, plan engagement activities and to assess future performance. 4. How much details should be disclosed? E.g. key parameters used, assumptions, analytical choices and business impact/effects for the scenario analysis. *Note: For relevant example(s), please refer to Appendix A.*

RISK MANAGEMENT

Financial institutions should integrate climate-related risks into their existing risk management processes. The process of integration would be distinctive to each financial institution especially considering the sheer diversity of practices and techniques to the management of risk where some institutions may use fully integrated, enterprise-wide risk management processes while others may use risk management processes that are more focused.

Each financial institution should disclose how it identifies, measures, monitors, manages and reports climate-related risks. They provide important insight to how the climate-related risks are integrated within firm-wide risk management framework(s).

(1) Process for Identifying and Assessing Climate-related Risks

Financial institutions should describe their risk management processes for identifying and assessing climate-related risks. An important aspect of this description is how they determine the relative significance of climate-related risks in relation to other risks.

Financial institutions should describe whether they consider existing and emerging regulatory requirements related to climate change (e.g., limits on emissions) as well as other relevant factors considered. Financial institutions should also consider disclosing the following:

(i) processes for assessing the potential size and scope of identified climate-related risks;
(ii) definitions of risk terminologies used or references to existing risk classification framework(s) used; and
(iii) characterisation of their climate-related risks in the context of traditional banking industry risk categories such as credit risk, market risk, liquidity risk, and operational risk.

(2) Process for Managing Climate-related Risks

Financial institutions should describe their processes for managing climate-related risks, including how they make decisions to mitigate, transfer, accept, or control those risks. In addition, financial institutions should describe their processes for prioritising climate-related risks, including how materiality determinations are made.

In describing their processes for managing climate-related risks, financial institutions should address key transition and physical risks, as appropriate.

Process for Integrating (1) and (2) into Overall Risk Management

Financial institutions should describe how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management.

The Implementation Guide presents two phases (Basic and Stretch) as follows:

A. BASIC

Recommendation R1: **Process for Identifying and Assessing Climate-related Risks**	
Description	Disclose how the financial institution looks at existing and emerging regulatory requirements related to climate change and other relevant factors. Disclose the risk classification framework(s) used. Disclose the risk terminology definitions used or existing risk classification framework(s) used.
Guidance Notes	The financial institution should explain its adherence to, or support for, the relevant and applicable climate-related public policies as well as regulations. In addition, it should provide clear definitions

	of risk terminologies (e.g. physical risk, transition risk, credit risk, market risk) and consider climate-related risks in relation to existing risks.
Key Considerations	1. What kinds of climate-related risks are the financial institution exposed to? 2. What kinds of climate-related risk exposures (e.g. flood, hurricane, technological changes) and other emerging regulatory related to climate change should be managed in addition to other existing risks[12]? *Note: For relevant example(s), please refer to Appendix A.*

Recommendation R2: **Process for Managing Climate related Risks**	
Description	Disclose the financial institution's risk management processes and controls. Disclose the identities of individual(s)/function(s) responsible for oversight of climate-related risks and its relationship with the business operations.
Guidance Notes	The financial institution should explain how climate-related risks are managed either independently or relative to other risks. After explaining key risk management processes and controls, the financial institution should also outline the approaches used to enhance capabilities and incorporate climate change risks into its existing risk management framework. The financial institution should clearly identify the parties that are overseeing the management of climate-related risks.
Key Considerations	1. What management processes are utilised (e.g. climate change risk inventory/taxonomy) to manage climate-related risks? 2. How does climate-related risks relate to other existing types of risk (e.g. mapped across existing risks)? 3. How does the financial institution prioritise its climate-related risks and, in particular, the process by which materiality determinations are made for strategic planning purposes? 4. Has the financial institution established the relevant risk management governance (e.g. climate risk committees at Board level or at the level of business units) to monitor key climate risks in relation to other existing risks? *Note: For relevant example(s), please refer to Appendix A.*

Recommendation R3: **Process for Integrating (i) Process for Identifying and Assessing Climate-related Risks and (ii) Process for Managing Climate-related Risks; into Overall Risk Management.**	
Description	Disclose the integration of processes for identifying, assessing, and managing climate-related risks into overall risk management.

[12] Please note that, to address Recommendation R1 within the context of this Application Guide, FIs should provide disclosures that revolve around climate-related risk exposures that materially impact their Malaysian operations. Moving beyond Basic, for FIs with operations that span foreign jurisdictions as well, they are encouraged to disclose information on all reasonably foreseeable climate-related material risks that are distinctive to their industry or the geographical areas in which the company operates. In this regard, disclosures should include sufficient and comprehensive information that will fully inform investors of all material and foreseeable climate-related risks and potential opportunities e.g. products and services & ability to further diversify business activities in correlations to the shift in consumer preferences.

	Disclose processes for prioritising climate-related risks, including how materiality determinations are made within the financial institution.
Guidance Notes	Where parts of integration of climate-related risks are still in progress, the financial institution should provide an elaboration of its on-going plans as well as targeted completion timeframes to fully embed identification, assessment and management of climate-related risks as part of its overall Risk Management Framework. Apart from integration of climate-related considerations (i.e. items (i) and (ii)) into the financial institution's overall Risk Management Framework (e.g. how physical and transition risks impact overall credit and market risks) an explanation should also include how it helps in credit and investment decision-making.
Key Considerations	1. How does the financial institution integrate items (i) and (ii) into their risk appetite framework and operational risk appetite statement? *Note: For relevant example(s), please refer to Appendix A.*

B. STRETCH

Recommendation R4: **Process for Identifying and Assessing Climate-related Risks**	
Description	Disclose the financial institution's risk management processes used to identify and assess climate-related risks. Disclose the financial institution's climate-related risks and their significance within existing risk categories such as credit, market, operational, liquidity risk. Disclose the financial institution's processes for assessing the potential size and scope of identified climate-related risks. Disclose key sectors in the financial institution's portfolio that are identified as being highly exposed to climate risk. Set out the financial institution's risk management controls or actions in managing impacts from direct climate-related risks (i.e. through own operations).
Guidance Notes	The financial institution should elaborate on the impacts of climate-related risks identified on its clients and, where appropriate, by making reference to the relevant industry- and/or internationally-recognised frameworks for identification of risks. In addition, the institution should disclose general risk management processes used in identifying and assessing climate-related risks (alongside existing risk factors) including determination of firm-wide vulnerability to climate change.
Key Considerations	1. Does the financial institution disclose how climate-related risks were identified (e.g. by tracking regulatory developments and/or engagements with stakeholders)? 2. Does the financial institution disclose the climate-related risk identification and assessment tools used such as economic scenario planning, stress-testing, vulnerability assessment scales, etc.? 3. Has the financial institution developed a methodology for assessing credit-rating impacts under a 2-degree climate scenario?

	4. If there are still climate risk-related aspects that are yet to be included/integrated into the institution's risk management framework, has the institution established an indicative timeline to do so? *Note: For relevant example(s), please refer to Appendix A.*

Recommendation R5: **Process for Managing Climate-related Risks**	
Description	Disclose the financial institution's processes for managing climate-related risks including decisions to mitigate, transfer, accept, or control those risks. Disclose improvements planned/completed by the financial institution to enhance capabilities and incorporate climate-related risks into existing risk management framework. Conduct training and employee readiness planning as well as programmes. Disclose how the financial institution's customers are engaged and helped in mitigating climate-related risks. Use metrics and targets to monitor progress in managing climate-related risks (i.e. exposure to, and quantification of, risk types by business segment and jurisdiction). Set out the financial institution's risk management controls or actions in managing impacts from indirect climate-related risks (i.e. through activities of its clients). Disclose the financial institution's exposure to, and quantification of, sustainable financing.
Guidance Notes	The financial institution should elaborate on its identified or potential climate-related risks under transition risk and physical risk categories, then discuss how the risks identified are managed using various management models to better understand associated impacts and to determine the appropriate responses. It can track progress for implementation of measures and manage these through setting of appropriate metrics and targets. The financial institution has to align risk management processes or measures to manage climate-related risks with existing risk management processes.
Key Considerations	1. Does the financial institution disclose the courses of action undertaken to manage climate-related risks e.g. assigning dedicated teams to manage such risks? 2. Has the financial institution organised any relevant training and/or employee readiness planning /programmes? 3. What is the approach adopted by the financial institution to effect improvements to the management of climate-related risks e.g. conducting analysis, conducting enhanced due diligence and/or provide recommendations to clients within sensitive sectors? 4. For insurers/takaful operators, what tools or instruments such as risk models are used to manage climate-related risks in relation to product development & pricing? In addition, how are risks generated by the rising propensity and severity of climate events being managed? *Note: For relevant example(s), please refer to Appendix A.*

Recommendation R6: **Process for Integrating (i) Process for Identifying and Assessing Climate-related Risks and (ii) Process for Managing Climate-related Risks; into Overall Risk Management.**	
Description	Disclose how the financial institution has integrated climate-related risks into existing risk categories such as credit, market, operational, insurance and liquidity risks. Disclose how the financial institution has integrated climate-related risks into existing risk framework(s) and/or directly into credit and investment decision-making (e.g. lending policies, underwriting standards, risk ratings, pricing models). Disclose the financial institution's exposure to physical and transition risks within its operations and business model, including concentrations of risk at portfolio and transaction levels, and by geographical footprint. Disclose the financial institution's efforts in supporting clients through mitigating climate-related risks via sustainable finance solutions. Implement policies that restrict/divest from high-risk exposures and in line with international commitments/frameworks. Enhance the financial institution's climate risk management framework to be more predictive.
Guidance Notes	The financial institution should elaborate on the extent to which climate-related risks have been integrated into its risk management framework(s), and where any further enhancements may be required. This is inclusive of both transition and physical risks (e.g. consideration of how new technologies could affect the different energy forms under Technology Risk, climate-related exposures on credit portfolio by geographical footprint). Additionally, the financial institution should also consider impacts of climate-related risks on existing categories of risk (e.g. how physical and transition risks impact credit risk, market risk). The financial institution should also disclose the integration of items (i) and (ii) by providing descriptions of specific enhancements to existing processes (e.g. underwriting assessment, no. of transactions approved, attestation).
Key Considerations	1. Has the financial institution conducted environmental risk (and, in particular, climate-related risk) assessments for new transactions and newly onboarded borrowers? If so, has the company made in-depth disclosures in this area? 2. Has the financial institution made and/or disclosed any commitments to support clients in terms of mitigation of physical and transition risks? 3. Has the financial institution disclosed how it embeds climate-related risks into existing risk framework(s) such as embedding physical and transition risks to facilitate credit and investment decision-making? 4. Has the financial institution developed sector-specific approaches to deal with financing/insuring for sensitive/high risk sectors (e.g. specific policies or exclusion lists)? 5. Has the financial institution disclosed approaches used to ingrate items (i) and (ii) such as descriptions of additional risk mitigation measures (e.g. new exclusion policies, updated risk appetite statements)? *Note: For relevant example(s), please refer to Appendix A.*

METRICS & TARGETS

Financial institutions should put in place climate-related metrics and targets as a key part of their efforts in decarbonising their financing or investment portfolios. These metrics and targets should be set in such a way that they will inform and be informed by the institution's governance, strategy, and risk management processes – effectively serving as the connection between the aforementioned TCFD core elements with their respective recommended disclosures, as well as their performance and transition plan.

To enhance transparency, each financial institution should disclose the climate-related commitments it made to investors and other stakeholders (both internal and external) using the proposed metrics and targets in this Guide. This will provide stakeholders with insights on how the financial institution is progressing against its commitments. Increased transparency will also improve risk pricing which will lead to better asset and capital allocation, thereby driving change in the real economy.

Financial institutions may also categorise the metrics and targets based on their use cases. The focus should revolve around specific key purposes such as portfolio decarbonisation, transition finance, portfolio alignment, physical and transition risk management, client engagement, among others. Such an approach would be helpful in scoping priorities and providing a more holistic view of an institution's long term, strategic action plan.

Metrics should be designed and selected based on the following guiding principles:

I. **Decision-useful**
   Chosen metrics should be meaningful in terms of providing adequate understanding of relevant climate risks and opportunities, their potential financial impact and ultimately affect on decision-making in the institution.

II. **Clear and understandable**
   Chosen metrics should be clearly defined and articulated, and wherever possible, contextualised against comparable peers or benchmarks.

III. **Reliable, verifiable and objective**
   Chosen metrics should be based on robust, science-based methodologies and free from bias and value judgment, therefore producing more objective disclosures.

IV. **Consistent over time**
   This is to ensure comparability of disclosures over time. Any changes in the methodology employed or data should be explained accordingly.

Building on the selected metrics, financial institutions should disclose and describe the targets, and report performance against them. This should be based on the institution's overall climate ambition with regards to its current performance, its future goals and the transition plan to get there.

While it is widely acknowledged that certain data gaps will be a considerable challenge in implementing robust metrics and targets, financial institutions should first start with the basic recommendations detailed in this document. In the process of doing so, financial institutions will engage and nurture clients, thus setting a phased level of expected disclosures from them. This will also trickle down to other stakeholders, such as rating agencies and data providers, translating into a domino effect which will eventually pave the way in bridging the necessary data gaps.

The metrics and targets provided in this Guide are applicable to all financial institutions. However, certain metrics may require contextualisation according to the institution's business activities, relevant asset classes and their respective client groups. Metrics and their methodologies may also evolve with the development of standards and framework over time. Financial institutions are therefore encouraged to customise the metrics and targets to be fit-for-purpose while keeping abreast with global and local development.
The Implementation Guide presents two phases (Basic and Stretch) as follows:

A. BASIC

Recommendation M1: **Key Climate-related Metrics**	
Description	***Recommendation M1a - GHG Emissions*** *Historical and current GHG Emissions (Example unit of measure – MT of CO2e).* 1. Absolute Scope 1 GHG Emissions. 2. Absolute Scope 2 GHG Emissions. 3. Absolute Scope 3 GHG Emissions (at minimum on business travel and employee commuting). ***Recommendation M1b - Transition Risks*** *Amount and extent of assets or business activities vulnerable to transition risks (Example unit of measure – Amount or percentage).* 1. Proportion of portfolio with exposure to assets or business activities vulnerable to transition risks: a. Concentration of credit exposure to/investments in companies with carbon-related assets or business activities by sector[13] e.g. energy, agriculture, construction, transportation, mining and quarrying, waste, food and forest products. Note: While this may require assessment on the exposure's planned strategies to respond to transition risk and opportunities (e.g. carbon tax), the financial institutions may leverage on existing datapoints (e.g. information/assessment to derive CCPT classification) to ascertain the carbon intensive exposure. The information/assessment will evolve over time based on the maturity of the FI's capacity in managing climate-related risk. ***Recommendation M1c - Physical Risks*** *Amount and extent of assets or business activities vulnerable to physical risks (Example unit of measure – Amount or percentage).* 1. Proportion of portfolio with exposure to assets or business activities vulnerable to physical risks: a. Proportion of bank's/insurer's/takaful operator's/asset manager's own property and operation vulnerable to physical risk such as flooding, heat stress or water stress. ***Recommendation M1d - Climate-Related Opportunities*** *Proportion of revenue, assets or other business activities (financing & investment) aligned with climate-related opportunities (Example unit of measure – Amount or percentage).* 1. Proportion of portfolio with exposure to low carbon assets or business activities. Examples include (non-exhaustive): a. (Insurance) Net premiums written related to energy efficiency and low-carbon technology. b. Percent of resilient infrastructure in investment portfolio. c. Proportion of clients in hybrid and electric vehicle. d. Financing / revenues from products or services that support the transition to a low-carbon economy.

[13] FIs may start by disclosing material exposures (e.g. selected portfolio or sectors) and enhance the disclosure in tandem with the improved data points available to the FIs over time, to produce more granular level disclosure (e.g. all portfolios or sectors in more detailed breakdown).

	e. Proportion of homes financed that are certified to a third- party, multi-attribute green building standard. f. Proportion of sovereign bond underwriting undertaken for countries with net zero 2050 targets. g. Proportion of clients reporting against disclosure good practice e.g. CDP, TCFD, SASB, CDSB. h. Proportion of clients (lending/ securities underwriting) with explicit and credible climate change risk mitigation plans. i. Proportion of financing and investment in climate adaptation measures (e.g., soil health, irrigation, technology). j. Exposure to green activities calculated by dividing revenue from green activities of investee companies / borrowers as defined by green taxonomy (e.g. BNM CCPT) by total revenues of assets in portfolio/product. Please note that financial institutions are expected to adopt and/or adapt any combination of the above as deemed appropriate for their respective circumstances. ***Recommendation M1e - Client Engagement*** *Client engagements on climate-related risks and opportunities (Example unit of measure – percentage).* 1. Proportion of total engagement meetings on climate risk/opportunity, broken down by topic/theme. 2. Proportion/share of the portfolio for which engagement on climate-related risk/opportunities has been a key topic. ***Recommendation M1f - Capital Deployment*** *Amount of capital expenditure, financing, or investment deployed toward climate-related risks and opportunities (Example unit of measure – Reporting currency).* 1. Share of financial assets (e.g. loans/financing, investment assets) based on classification by green taxonomy for example BNM's Climate Change and Principles-based Taxonomy ("CCPT"). ***Recommendation M1g - Remuneration*** *Proportion of director and/or senior management remuneration linked to sustainability considerations (Example unit of measure – Percentage, weighting, description, or amount in reporting currency).* 1. Portion/weightage of directors and/or senior management's remuneration linked to sustainability-related KPIs (e.g. investments in related products, performance against emissions targets).
Guidance Notes	The financial institution should disclose key climate-related metrics Additionally, the institution should contextualise all such climate-related metrics in terms of their relationships with other metrics, especially linking to financial indicators when possible. Relevant considerations include (non-exhaustive): (i) Listing and descriptions of key metrics used to measure climate-related risks and opportunities. (ii) Descriptions should include methodology for assessing each metric. (iii) Descriptions should contain an affirmation that the metrics are comparable and consistent across various years and that there were no major methodological or formula changes between years.

	(iv) If there were major methodology or formula changes between years, the report should make this explicit and explain the rationale for the change. (v) Association of financial metrics with climate-related metrics when possible. (vi) Contextualisation of metrics in relationship to a specific project or target. In relation to Scopes I, II and III GHG emissions, disclosures should include: (i) Disclosure of methodologies used to calculate emissions, along with which gases are factored into GHG emissions (e.g. CO2, CH4, N2O, HFC). (ii) Disclosure of existing scope/boundary of reporting and its underlying basis. (iii) Consistent use of absolute/relative intensity metrics to enable understanding against targets, featuring a year-to-year comparison when possible. (iv) Inclusion of industry-specific GHG efficiency ratios if possible. (v) Discussion of risks pertaining to the largest source of GHG emissions.
Key Considerations	In presenting climate-related metrics and financial impacts and associated contextual information in their disclosures, financial institutions should provide the following: (i) **Types of measurements used** including whether information comes from direct measurements, estimates, proxy indicators, or financial and management accounting processes and standards. (ii) **Methodologies used** such as the GHG Protocol for greenhouse gas emissions. Methodology discussion for GHG emissions should include emissions factors, scope, and boundary. Methodology discussions should also provide key business assumptions and which qualitative or quantitative climate scenarios were used. (iii) **Changes in absolute and relative amounts over time** including whether acquisitions, divestments, or policies have affected results. (iv) **How results are connected** with business units, company strategy, and financial results. Where it aids understanding, the financial institutions should consider disaggregating information by such categories as geographic area, business unit, asset, type, upstream and downstream activities, source, and vulnerability of area. (v) **The criteria and indicators used to assess both the level and impact of actual and potential climate-related risks and opportunities** on operational and financial performance and position in the reporting period and beyond (where the impact may affect planning, risk management, and opportunity optimisation in future reporting periods). The financial institution should also consider the provision of appropriate incentives for its management in relation to the roles & responsibilities assumed in managing climate-related risks and opportunities e.g. by incorporating GHG emissions / reduction targets within the management's scorecard.

Recommendation M2: **Key Climate-related Targets**	
Description	Set and disclose clear climate-related targets based on recognised metrics (including cross-industry, sector-specific metrics and/or institution-specific metrics).
Guidance Notes	(i) ***Targets set should be quantitative and granular:*** Climate-related targets should be quantified, where possible, especially for metrics that are fully in the financial institution's control, such as amount of investment in physical risk reduction. Climate-related targets should also be granular enough to enable tracking. The table below provides illustrative examples of quantitative, granular targets across all cross-industry, climate-related metrics.

Table D1

Illustrative, Quantified Targets

Cross-Industry, Climate-Related Metrics	Quantified, Climate-Related Targets *(Illustrative)*
GHG emissions (Absolute Scope 1, Scope 2, and relevant, material categories of Scope 3 emissions, as well as carbon intensity)	• Reduce net Scope 1, 2, and 3 emissions to zero by 2050, with an interim target to cut emissions by 70% relative to a 2015 baseline by 2035
Carbon price(s) (external and shadow/internal)	• Increase shadow carbon price to $150 by 2030 to reflect potential changes in policy • *Not applicable for external carbon price*
Proportion of assets and/or operating, investing, or financing activities materially exposed to physical risks, based on key categories of commonly accepted risks	• Reduce percentage of asset value exposed to acute and chronic physical climate-related risks to 50% by 2050 • Ensure at least 60% of flood-exposed assets have risk mitigation in place in line with the 2060 projected 100-year floodplain
Proportion of assets and/or operating, investing, or financing activities materially exposed to transition risks, based on key categories of commonly accepted risks	• Reduce percentage of asset value exposed to transition risks by 30% by 2030, relative to a 2019 baseline
Proportion of assets and/or operating, investing, or financing activities aligned toward climate-related opportunities, based on key categories of commonly accepted opportunities	• Increase net installed renewable capacity so that it comprises 85% of total capacity by 2035
Amount of senior management remuneration impacted by climate considerations	• Increase amount of senior management remuneration impacted by climate considerations to 50% by 2025
Amount of expenditure or capital investment deployed toward climate risks and opportunities	• Invest at least 25% of annual capital expenditure into renewable energy • Lend at least 10% of portfolio to projects focused primarily on physical climate-related risk mitigation

Source: Adopted from Task Force on Climate-related Financial Disclosures Guidance on Metrics, Targets, and Transition Plans (2021)

(ii) ***Targets should be designed by giving due consideration to the financial institution's strategy and forecasting (and, informed by scenario analysis and climate science):*** Climate-related targets should be aligned with, and supportive of, the company's strategy and strategic goals, and informed by appropriate forecasting and climate science.
Financial institutions should consider providing a description of how climate scenario analysis influenced the determination of targets and broader climate strategy. For GHG reduction targets, the financial institution should specify which temperature pathway its target is expected to align to. The institution should consider summarising the role of scenario analysis in developing climate-related targets and testing of resilience under various outcomes (e.g. choosing business relevant time horizons, testing achievability, determining contribution to business resilience).

(iii) ***Targets should be clearly specified:*** Climate-related targets should be defined clearly over time and with appropriate baseline. The financial institution should provide clear definition of the baseline time period against which progress will be tracked as well as adoption of a consistent base year across targets.

(iv) ***Time horizon:*** The financial institution should disclose a defined time horizon by which targets are intended to be achieved. There should be consistency across targets and, if feasible, consistent with key dates tracked by climate-related organisations or regulators.



Source: *Source: Adopted from Task Force on Climate-related Financial Disclosures Guidance on Metrics, Targets, and Transition Plans (2021)*

Key Considerations	Where appropriate, targets pertaining to climate-related risks and opportunities should be set relative to metrics described in the preceding disclosures. As additional guidance, all such targets should include certain basic features, including: (i) Whether the target is absolute or intensity-based. (ii) Relevant time frame over which the target applies. (iii) Base year from which progress is measured. (iv) Key performance indicators used to assess progress against target. (v) Targets should feature the following areas relating to climate change: GHG emissions, water usage and energy usage. It can also cover other goals, including environmental financial goals, financial loss tolerance, avoided GHG emissions throughout entire product life cycle, and net revenue goals from products designed for a lower-carbon economy.

B. STRETCH

Recommendation M3: **Key Climate-related Metrics**	
Description	***Recommendation M3a - GHG Emissions*** *Historical, current and future GHG Emissions (Example unit of measure – MT of CO2e).*

	1. Absolute Scope 3 GHG Emissions. 2. Financed/Insured Emissions by Asset Class. 3. Weighted Average Carbon Intensity-Portfolio Exposure to Carbon-Intensive Companies. 4. Physical Emissions Intensity – Volume of Carbon Emissions Per Unit of Production or Physical Output[14] . 5. Economic Emissions Intensity – Volume of Carbon Emissions Per RM of Revenue. In addition to the above and following on from recommended Basic Metrics for this category, additional forward-looking element/analysis to be included as Stretch – based on methodologies such as Scenario Analysis, Trend Analysis, Sensitivity Analysis, and Simulations as well as commitments of emissions reduction targets or climate-related targets. Note: Aggregation of emissions reduction targets or estimated emissions of assets or borrowers. ***Recommendation M3b - Transition Risks*** *Amount and extent of assets or business activities vulnerable to transition risks (Example unit of measure – Amount or percentage).* 1. Volume of real estate collaterals highly exposed to transition risk. 2. Distribution of borrowers/customers by climate-related risk ratings. 3. Transition risk heatmap by sector/technology / geography and materiality to portfolio or degree of transition risk [reflecting own assessment of carbon prices, policies, corporate strategies, etc.]. ***Recommendation M3c - Physical Risks*** *Amount and extent of assets or business activities vulnerable to physical risks (Example unit of measure – Amount or percentage).* 1. Proportion of portfolio with exposure to assets or business activities vulnerable to physical risks: a) Proportion of investing or financing activities vulnerable to physical risk. b) Climate-related events that could potentially affect supply chains, outsourcing arrangements, external service providers, and business continuity planning. 2. Number and value of mortgage loans in flood hazard/risk map. 3. For insurers/takaful operators, proportion of insuring/underwriting activities vulnerable to physical risks (e.g. liabilities arising from increases in insurance claims). 4. Distribution of borrowers/clients by climate-related risk rating. 5. Physical risk heat map by sector/ geography [over time reflecting value chain, adaptive capacity, corporate response, etc.]. 6. Climate-adjusted Loan-to-value ratios. 7. Correlation between asset values and extreme events. ***Recommendation M3d - Climate-Related Opportunities*** *Proportion of revenue, assets or other business activities (financing & investment) aligned with climate-related opportunities (Example unit of measure – Amount or percentage).* 1. Avoided Emissions: how client's products can help avoid GHG emissions compared to other products. 2. Climate-related capex intensity of clients within portfolio (capex on climate solutions as % of total capex). Note: To guide engagement and capital reallocations to best-in-sector companies.

[14] It is envisaged that disclosure guides for Malaysian businesses will be developed in 2022.

Recommendation M3e - Portfolio Alignment
Forward-looking assessments of the convergence between the emissions profile of a portfolio, and the sectoral decarbonization trajectory necessary to achieve climate goals.

1. Sectorial target/limit exposure to high GHG-emitting sectors (e.g. oil and gas) in financial institution's own portfolio and client's emission reduction targets.
2. Portfolio scenario alignment, i.e. forward-looking assessments of the convergence between the emissions profile of a portfolio, and the sectoral decarbonization trajectory necessary to achieve climate goals, developed based on metrics such as sectoral emissions intensity, production capacity, technology mix, originating from client-level data. An example of a portfolio alignment tool is the Paris Agreement Capital Transition Assessment (PACTA).
3. Long-term and intermediate portfolio target setting to support meeting the temperature goals of the Paris Agreement using widely accepted science-based decarbonisation scenarios, e,g, Science Based Targets initiatives (SBTi), net zero standards (Glasgow Financial Alliance for Net Zero, UN Race to Net Zero).
4. Implied temperature rise – warming metrics to quantify portfolio warning i.e. estimates the level of future warming with which a portfolio is currently aligned, on the basis of forecasting emissions intensities to a specific date (e.g. 2030) and then extrapolating future temperature outcomes by 2100.

Recommendation M3f - Client Engagement
Client engagements on climate-related risks and opportunities (Example unit of measure – Amount or percentage).

1. Engagements where positive progress has been achieved/evidenced against objectives (e.g. by theme, on climate disclosures etc.).
2. Advanced interventions (e.g. for AMs, AGMs attended to speak on climate change, resolutions publicly supported in advanced or co-filed).
3. Transition planning with clients that lay out a set of targets and actions supporting its transition toward a low-carbon economy.

Recommendation M3g - Internal Carbon Prices
Price on each ton of GHG emissions used internally by an organisation (Example unit of measure – Price in reporting currency, per MT of CO2e).

Financial institutions to consider:

1. Internal carbon price: a carbon price charged to a business activity, product line, or other business unit based on its GHG emissions (these internal taxes or fees are similar to intracompany transfer pricing). Internal revenues from these fees or taxes are often used by an organization to incentivize emissions mitigation and investment in various low-carbon opportunities.
2. Shadow carbon price, by geography: a theoretical cost or notional amount that the organization does not charge but that can be used in assessing the economic implications or trade-offs for such things as risk impacts, new investments, net present value of projects, and the cost-benefit of various initiatives.

Recommendation M3h - Performance
Impact of climate-related risks or opportunities on financial performance (Example unit of measure – Percentage, weighting, description, or amount in reporting currency).

1. Increases in revenue from new products or services from climate opportunities.
2. Increases in cost due to carbon prices, business interruption, contingency, or repairs.
3. Changes to operating cash flow from changes in upstream costs.

	4. Impairment charges due to assets exposed to transition risks. 5. Changes to total expected losses due to physical risks. 6. (Insurance/Takaful) Probable Maximum Loss (PML) of insured products (property lines) from natural catastrophes. 7. Expected future financial impacts based on scenario analysis (e.g. climate Value-at-Risk, climate adjusted probability of default). 8. Total expected losses under different climate scenarios. ***Recommendation M3i - Financial Position*** *Impact of climate-related risks or opportunities on financial position (Example unit of measure – Amount or percentage).* 1. Changes to the carrying amount of assets due to exposure to physical and transition risks. 2. Changes to the expected portfolio given climate-related risks and opportunities. 3. Changes in liability and equity due to increases or decreases in assets (e.g., due to low-carbon capital investments or to sale or write-offs of stranded assets).
Guidance Notes	As per Guidance Notes detailed under Recommendation M1.
Key Considerations	As per Key Considerations detailed under Recommendation M1.

APPENDIX A
GOVERNANCE

BASIC

Recommendation G1:
Board Oversight of Sustainability and Climate-related Matters

Description	Disclose nature of Board oversight and accountability with respect to sustainability and climate-related matters, risks and opportunities.
Example(s)	**Example 1** In Maybank Group, the Board is the governing body tasked with reviewing the Group's sustainability strategies and performance. The Group Sustainability Council sets the Group sustainability agenda and reports to the Group President and CEO, who deliberates and approves all key sustainability related matters. Sound sustainability governance is further cascaded throughout the group to various departments to operationalise the Sustainability Plan.

MAYBANK GROUP

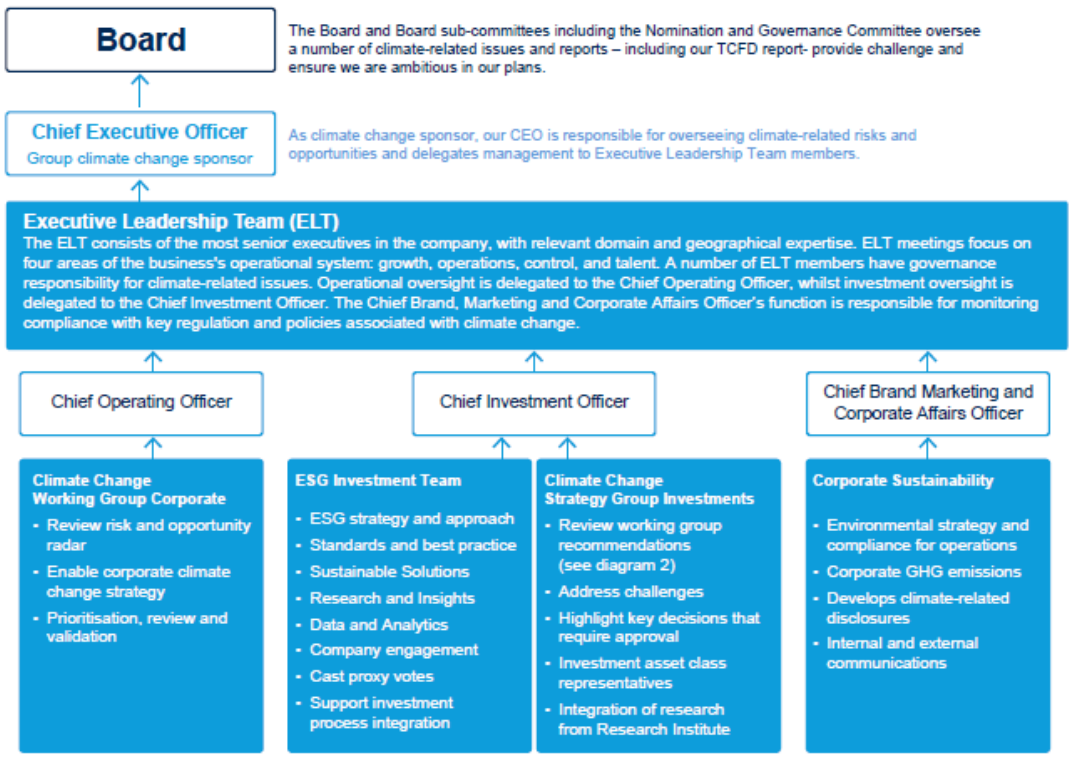
Governing Body	Role
Board of Directors	Reviews sustainability performance and the Group's strategies on the advancement of sustainability with a focus on ESG aspects.
Group President and Chief Executive Officer	Deliberates and approves all key sustainability-related matters.
Group Sustainability Council	Sets the Group Sustainability Agenda, including strategy, roadmap and monitoring of action plans. The Council reports to the Group President and Chief Executive Officer and is represented by Country CEOs, Business Sector Heads and Support Sectors Heads, with selected other Department Heads as invitees.
Various Departments	Operationalise the 20/20 Sustainability Plan in respective business and operational areas. Departments and teams provide information against measurable indicators. Other specific departmental responsibilities include: • **Group Corporate Affairs:** Custodian of the 20/20 Sustainability Plan. • **Group Risk:** Oversees overall Group Risk strategy and progress, including ESG issues and sustainability risks. • **Group Human Capital:** Oversees overall Group Human Capital strategy and progress. • **Group Property, Security & Valuation:** Manages resource consumption and usage including environmental impact from business activities.

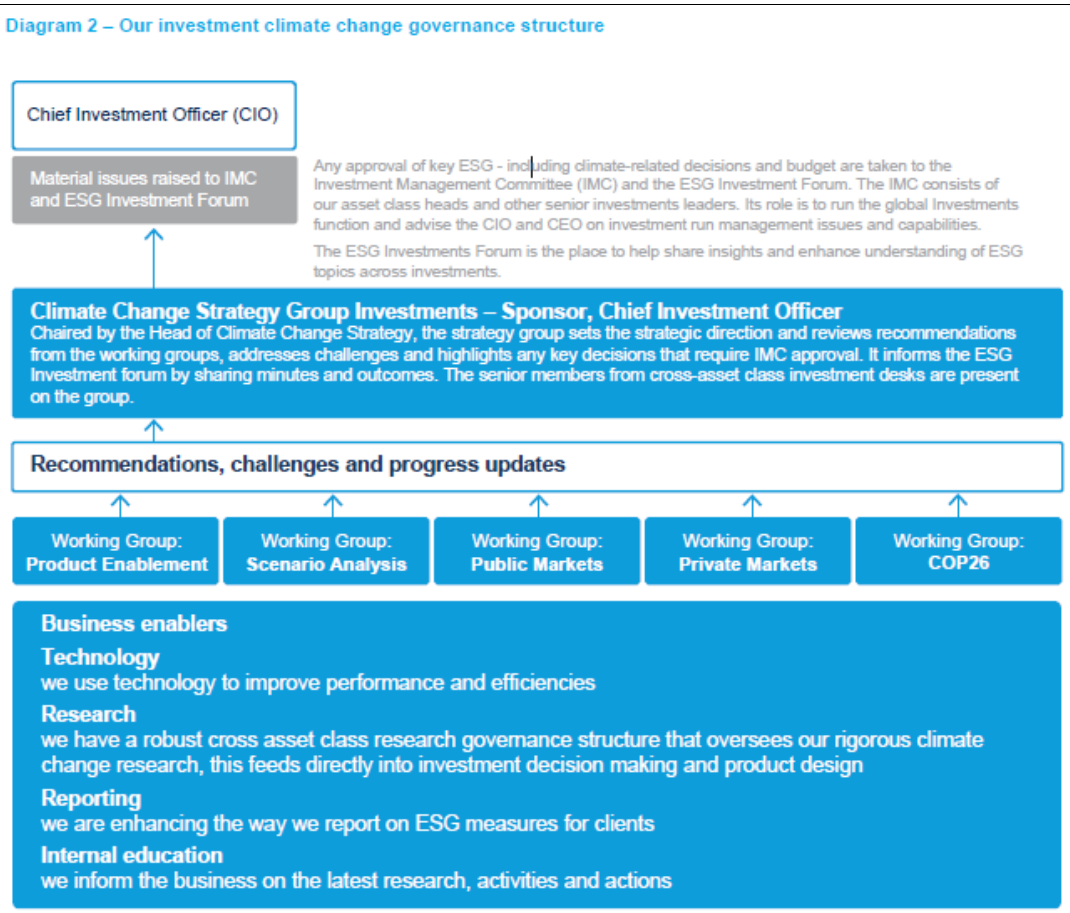
MAYBANK FOUNDATION

Governing Body	Role
Board of Trustees	Approves and reviews programmes and performance.
Chief Executive Officer	Oversees the overall strategy and progress.
Maybank Foundation Team	Implements and monitors Maybank's flagship community programmes based on focus areas under the Community and Citizenship pillar in our 20/20 Sustainability Plan. Supports community programme partnerships and initiatives throughout the Group.

Source: Maybank Sustainability Report FY2020

Maybank has continuously enhanced the integration of sustainability considerations into the Group's strategy setting and risk management activities. Past Board reviews included reviewing the Board's stance on forestry and logging. For more information about Maybank's sustainability governance, click link here:
https://www.maybank.com/iwov-resources/corporate_new/document/my/en/pdf/annual-report/2021/Maybank_AR2020-Corporate_Book_.pdf

Recommendation G2: **Sustainability Governance Structure Including Climate-Related Matters at the Management Level**	
Description	Disclose management-level sustainability governance structure as well as processes for sustainability and climate-related matters, including accountability, responsibility, and decision-making.
Example(s)	**Example 1** Standard Life Aberdeen embeds responsible and sustainable business practices into everything they do in order to create long-term value for their stakeholders. The Board has oversight on overall climate-related risks and opportunities, and are supported by various Executive Leadership Team members. Diagram 1 – Our corporate climate-related governance structure  *Source: Standard Life Aberdeen: TCFD and Environment Report 2020* Standard Life Aberdeen clearly defines the roles and responsibilities of each business unit in the implementation of its sustainability strategies.



Source: Standard Life Aberdeen: TCFD and Environment Report 2020

For more information about Standard Life Aberdeen disclosures, click link here: https://www.aberdeenstandard.com/docs?editionId=8add93e9-5b15-42da-a6f3-bee24b615677

Recommendation G3: **Sustainability and Climate-related Board Credentials**	
Description	Disclose sustainability and climate-related credentials, experience and individual biographies for Board members.
Example(s)	**Example 1** The Australia and New Zealand Banking Group Limited (ANZ) has constantly strived to have individuals on its Board with a variety of technical skills and experiences, with the aim of ensuring that the team's combined skillsets contribute to its long-term success. Apart from their directors' experiences and biographies, ANZ also publishes pertinent corporate governance-related documents on its website, which include Board composition, selection, appointment, as well as its Board skills matrix (as shown below).

Skills and experience	Number of Directors
Strategy and Commercial Acumen (knowledge and experience in charting and monitoring the implementation of strategic objectives using commercial judgment)	8
Banking and/or Financial Services (experience outside ANZ in significant components of the banking or financial services industry)	6
Technology (knowledge and experience in the application and development within enterprises of major technology, data, technology related innovation or digital infrastructure or applications)	4
Leadership role in organisations of significant size (held CEO or senior position in a listed company or large/complex organisation or Government body)	8
Workplace culture and/or remuneration (knowledge and experience at a senior level in the management or oversight of workplace culture matters and/or the oversight of remuneration practices and senior appointments)	8
Corporate Governance, Risk Management/Compliance and/or Sustainability (including but not limited to experience in the design and application of corporate governance, risk management/compliance and/or sustainability frameworks and related practices. This includes experience as a Director/Executive of a listed company or large/complex organisation or Government body)	8
Regulatory/ Government Policy (experience in relation to the development of regulation / government / industry policy matters and/or significant stakeholder engagement/management)	8
International business experience	8
Financial acumen (good understanding of financial statements relating to businesses of significant size, including ability to probe the adequacies of financial and related risk controls)	8

Source: ANZ Shareholder Centre https://www.anz.com/shareholder/centre/about/corporate-ernance/

Recommendation G4: **Sustainability and Climate-Related Training**	
Description	Disclose the initiatives undertaken and training programmes conducted annually to build capacity of Board members and management on sustainability issues including climate-related matters.
Example(s)	**Example 1** HSBC has long prided itself for providing continuous learning and skills development for its employees. This is to prepare the employees to meet the present and future challenges in the financial industry. In HSBC, the Group Company Secretary and Chief Governance Officer works with the Group Chairman to oversee appropriate training programmes for the Board. As part of efforts to align the bank's strategy with sustainability-related issues, training on relevant topics have been provided to the Board.

Directors' induction and ongoing development in 2020

Director	Induction[1]	Strategy and business briefings[2]	Risk and control[3]	Corporate governance[4]	Global mandatory training[5]	ARCC, Chairs and Remco Forum	Subsidiary
Kathleen Casey	○	●	●	●	●	●	○
Laura Cha	○	●	●	●	●	●	●
Henri de Castries	○	●	●	●	●	○	○
James Forese	●	●	●	●	●	○	○
Steven Guggenheimer	●	●	●	●	●	○	○
Irene Lee	○	●	●	●	●	●	●
José Antonio Meade Kuribreña	○	●	●	●	●	●	○
Heidi Miller	○	●	●	●	●	●	●
Eileen Murray	●	●	●	●	●	○	○
David Nish	○	●	●	●	●	●	○
Noel Quinn	●	○	●	●	●	●	○
Ewen Stevenson	○	●	●	●	●	●	○
Jackson Tai	○	●	●	●	●	●	○
Mark Tucker	○	●	●	●	●	●	○
Pauline van der Meer Mohr	○	●	●	●	●	●	○

1 The induction programme is delivered through formal briefings and introductory sessions with Board members, senior management, treasury executives, legal counsel, auditors, brokers, tax advisers and regulators. Topics covered included: values, culture and leadership; governance and stakeholder management; Directors' legal and regulatory duties; anti-money laundering and anti-bribery; technical and business briefings; and strategy.

2 Directors participated in business strategy, market development and business briefings, which are global, regional and/or market-specific. Examples of specific sessions held in 2020 included 'Asia growth: build and strengthen in Hong Kong' and 'Strategic priority: growth of UK ring-fenced bank'.

3 Directors received risk and control training. Examples of specific sessions held in 2020 included 'Governance of climate-related risk', 'Wholesale and retail credit risk management', 'Forward-looking financial crime risk issues', 'Resolvability assessment framework' and 'Technology terminology'.

4 All Directors received corporate governance training including 'Senior Managers and Certification Regime' and 'Climate and sustainable finance'.

5 Global mandatory training, issued to all Directors, mirrored training undertaken by all employees, including senior management. These included management of risk under the enterprise risk management framework, with a focus on operational risk; cyber risk and fraud; health, safety and well-being; data privacy and the protection of data of our customers and colleagues; combating financial crime, including understanding money laundering, sanctions, and bribery and corruption risks; and our values and conduct, including workplace harassment and speaking up.

Source: HSBC Holdings PLC: Annual Report and Accounts 2020

For more information about HSBC Board induction and training, click link here: https://www.hsbc.com/-/files/hsbc/investors/hsbc-results/2020/annual/pdfs/hsbc-holdings-plc/210223-annual-report-and-accounts-2020.pdf

Recommendation G5: Sustainability and Climate-related Discussions in Board Meetings	
Description	Disclose the frequency of Board meetings per year in which sustainability and climate-related issues have been a substantive agenda item, and a summary of key climate-related issues and initiatives deliberated.
Example(s)	**Example 1** To promote CIMB's sustainability agenda, the Board has designated a Sustainability Sponsor to advise and recommend to the Board appropriate business strategies from the aspect of sustainability, and act as a sustainability advocate within the institution and externally. The Board discusses sustainability matters on a regular basis, and discloses the matters discussed in its Annual Report.



Main Areas of Oversight	Number of meetings in 2020
The Board is responsible for the following: • Strategic/business plans of CIMB and the monitoring of Management's success in implementing the strategies and plans; and CIMB's annual budget • Conduct of CIMB's business • Identifying principal risks and ensuring the	18 meetings held to deliberate, amongst others, on the following: • Matters relating to the Company, the three Malaysian banking institutions and regional subsidiaries • CIMB's Budget • CEO's Quarterly Report
• Approving the changes on Corporate Organisation Structure of CIMB • Ensuring that there are adequate controls and systems in place to measure the implementation of the Group's policies • Reviewing the adequacy and integrity of CIMB's internal control systems and management information systems • Overseeing the decisions and actions of Management in achieving the Group's goal to be a sustainable organisation, taking into account key issues related to Environmental, Economic and Social aspects and impacts to the Group's business activities	• Anti-Money Laundering/CFT Report • Revision to the Terms of Reference of Board or Board Committees • Board's Annual Evaluation on the Effectiveness of the Management of Compliance Risk • CIMB Niaga Recovery Plan Update • KPI Scorecard for Group CEO • Governance on Remuneration of Senior Management and Material Risk Takers • Annual Evaluation Exercise for Board and Key Responsible Persons • Forward23 – Strategy • Annual Insurance Programme Renewal • Sustainability Framework, Policy and Progress including coal exit • COVID-19 Impact Analysis and Risk Updates

Source: CIMB Annual Report 2020

Read more about CIMB Annual Report here:
https://www.cimb.com/content/dam/cimb/group/documents/investor-relations/annual-general-meeting/2021/cimb-ar-2020.pdf

Recommendation G6 **Sustainability/Climate-linked Remuneration**	
Description	Link Board of Director (excluding independent directors) and top management remuneration to performance against specified sustainability and climate-related targets.
Example(s)	**Example 1** HSBC's remuneration policy covers many elements, such as base salary, annual incentives, fixed allowances, long-term incentives, etc. Executive directors are assessed against scorecard objectives which were developed along with the group's strategic priorities and risk appetite, using a scorecard that includes non-financial performance criteria, including the Environment (as shown below).

Annual assessment

	Minimum (25% payout)	Maximum (100% payout)	Performance	Group Chief Executive Weighting (%)	Group Chief Executive Assessment (%)	Group Chief Executive Outcome (%)	Group Chief Financial Officer Weighting (%)	Group Chief Financial Officer Assessment (%)	Group Chief Financial Officer Outcome (%)
Grow profit before tax[1] ($bn)	19.91	23.38	14.77	30.0	–	–	20.0	–	–
RWA optimisation[2] ($bn)	35.00	44.90	51.50	20.0	100.0	20.00	20.0	100.0	20.00
Cost savings ($bn)	1.00	1.60	1.04	–	–	–	10.0	30.0	3.00
Customer satisfaction	See following section for non-financial performance commentary			10.0	80.0	8.00	10.0	80.0	8.00
Employee experience				10.0	95.0	9.50	10.0	95.0	9.50
Environment				10.0	85.0	8.50	10.0	85.0	8.50
Risk and compliance				10.0	85.0	8.50	10.0	85.0	8.50
Personal objectives				10.0	100.0	10.00	10.0	62.5	6.25
Total				100.0		64.50	100.0		63.75
Maximum annual incentive opportunity (£000)						£2,478			£1,412
Annual incentive pre-cash waiver (£000)						£1,598			£900
Annual incentive post-cash waiver (£000)						£799			£450

Long-term incentive (LTI) conditions include carbon footprint reduction and sustainable finance and investment amount.

Performance conditions for LTI awards in respect of 2020

Measures		Minimum (25% payout)	Target (50% payout)	Maximum (100% payout)	Weighting %
RoTE (with CET1 underpin)[1]		8.0%	9.0%	10.0%	25.0
Capital reallocation to Asia (with CET1 underpin)[2]		45.0%	47.0%	50.0%	25.0
Environment and sustainability[3]	**Carbon reduction**	42.0%	48.0%	51.0%	25.0
	Sustainable finance and investment $bn	200.0	240.0	260.0	
Relative TSR[4]		At median of the peer group	Straight-line vesting between minimum and maximum	At upper quartile of peer group	25.0

Source: HSBC Holdings PLC: Annual Report and Accounts 2020

Read HSBC Annual Report here:
https://www.hsbc.com/investors/results-and-announcements/annual-report

STRETCH

Recommendation G7: **Separate Committee on Sustainability and Climate-related Matters**	
Description	Set up a separate committee to oversee sustainability-related matters, reporting to the Board of Directors for all sustainability and climate-related matters.
Example(s)	**Example 1** To embed sustainable practices into the business, UBS established a Corporate Culture and Responsibility Committee that supports the Board of Directors in overseeing responsible conduct and climate-related matters. The committee monitors and reviews all sustainability strategies and activities, including the implementation and monitoring of sustainability programmes and initiatives within the group.

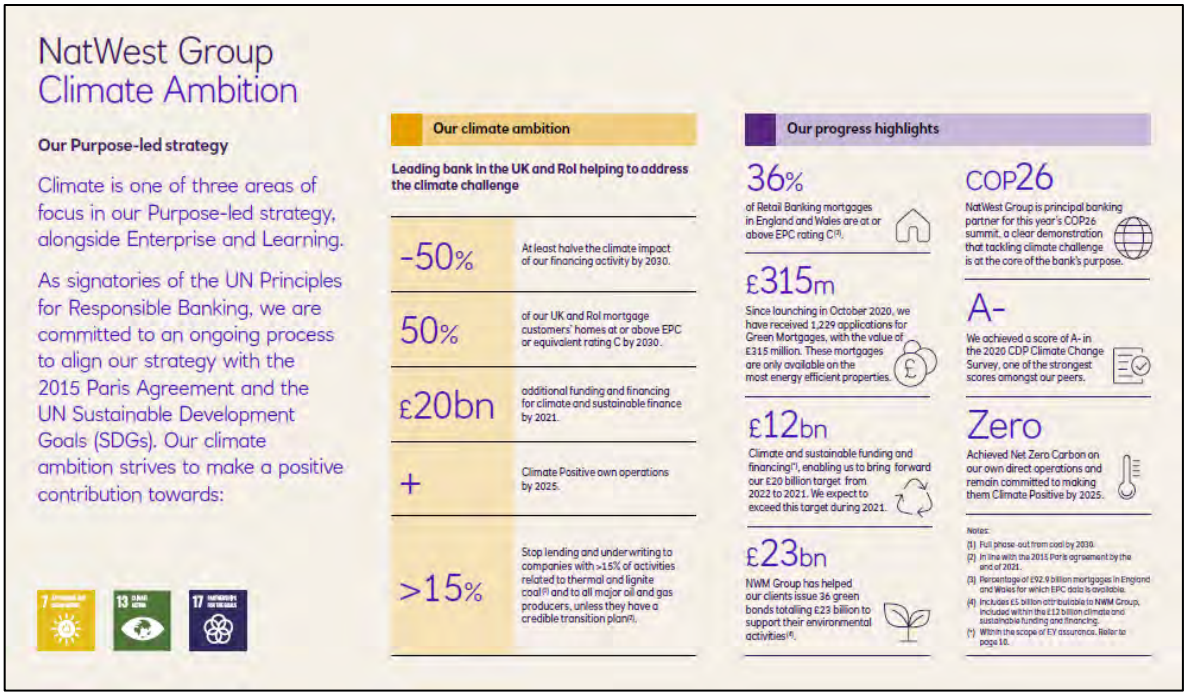


Source: UBS Website – Corporate Governance: Board Committees

Read UBS Corporate Culture and Responsibility Committee here: https://www.ubs.com/global/en/our-firm/governance/ubs-group-ag/board-committees.html#corporate

STRATEGY

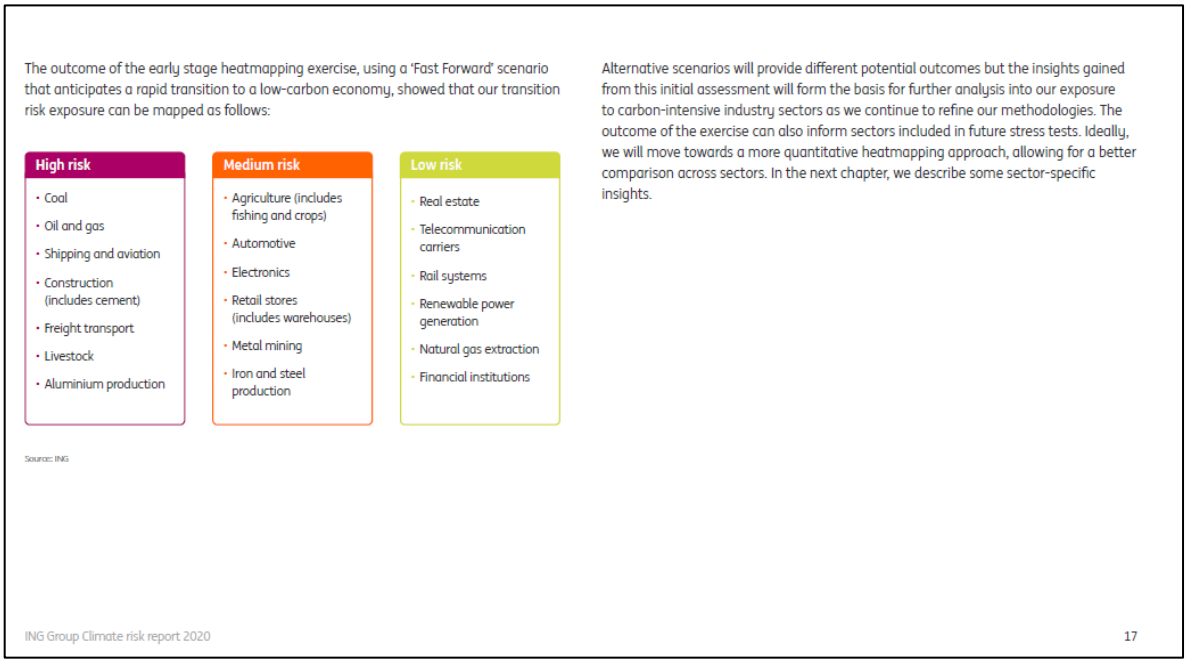
BASIC

Recommendation S1: **Identification of Climate-related Risks and Opportunities**	
Description	Review the financial institution's strategy to identify and disclose climate-related risks and opportunities over the short-, medium-, and long- term.
Example(s)	**Example 1** NatWest Group report that shows the identification of opportunities, alongside goals and metrics in addressing climate change:  *Source: NatWest Group Plc's Climate-related disclosures report 2020*

Read more about NatWest Group Plc's Climate-related disclosures report 2020 here: https://investors.natwestgroup.com/~/media/Files/R/RBS-IR-V2/results-center/19022021/2020-climate-related-disclosure-report.pdf

Example 2

ING Group report that shows the identification of risks from an early stage via heatmapping exercise:



The outcome of the early stage heatmapping exercise, using a 'Fast Forward' scenario that anticipates a rapid transition to a low-carbon economy, showed that our transition risk exposure can be mapped as follows:

High risk
- Coal
- Oil and gas
- Shipping and aviation
- Construction (includes cement)
- Freight transport
- Livestock
- Aluminium production

Medium risk
- Agriculture (includes fishing and crops)
- Automotive
- Electronics
- Retail stores (includes warehouses)
- Metal mining
- Iron and steel production

Low risk
- Real estate
- Telecommunication carriers
- Rail systems
- Renewable power generation
- Natural gas extraction
- Financial institutions

Source: ING

Alternative scenarios will provide different potential outcomes but the insights gained from this initial assessment will form the basis for further analysis into our exposure to carbon-intensive industry sectors as we continue to refine our methodologies. The outcome of the exercise can also inform sectors included in future stress tests. Ideally, we will move towards a more quantitative heatmapping approach, allowing for a better comparison across sectors. In the next chapter, we describe some sector-specific insights.

ING Group Climate risk report 2020 17

Source: 2020 ING Climate Risk Report

Read more about 2020 ING Climate Risk Report here: https://www.ing.com/Newsroom/News/2020-ING-Climate-risk-report.htm

Example 3

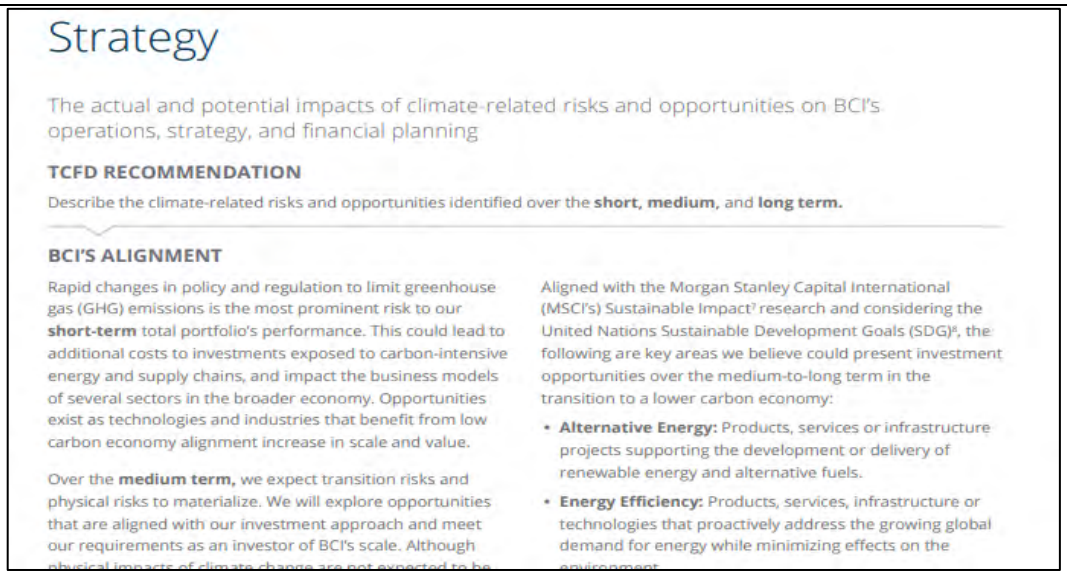
HSBC Amanah sets out examples of climate risk events that could cause financial losses or impact to their strategies, and the principal risk types most likely to be materially impacted.

	CLIMATE RISK EVENT	PRINCIPAL RISK TYPE IMPACTED	EXAMPLES OF POTENTIAL IMPACT
PHYSICAL RISK	Extreme weather events or chronic changes in weather patterns impact our assets, operations or our customers' assets	• Retail credit risk • Wholesale credit risk • Resilience risk	• The cost of flood damage to a customer's home leaves them unable to repay their home financing • One of our branches is flooded and we are unable to service customers
TRANSITION RISK	Our business models or our customers' business models fail to align to a low-carbon economy	• Wholesale credit risk • Reputational risk	• Failure to align to new regulations leads to a loss of business and customers are unable to repay their financing • Our actions lead to negative external perceptions of our organisation
	We fail to effectively design and market climate-related products across all global businesses or respond to regulatory change	• Reputational risk • Regulatory compliance risk	• We fail to respond to customer demand or a regulatory change, leading to adverse stakeholder reaction

Source: HSBC Amanah, 2020

Read more about 2020 HSBC Amanah TCFD Report here:
https://cdn.hsbcamanah.com.my

Recommendation S2: **Impact of Climate-related Risks and Opportunities**	
Description	Assess and disclose how climate-associated risks and opportunities could affect the financial institution's existing businesses, strategy, and financial planning.
Example(s)	Examples of basic disclosures that show qualitative impacts on the business from the climate-related risks identified: - **Example 1** British Columbia Investment Management Corporation's (BCI) report describes the company's alignment towards the TCFD Recommendations in terms of identification of climate-related risks and opportunities:



Strategy

The actual and potential impacts of climate-related risks and opportunities on BCI's operations, strategy, and financial planning

TCFD RECOMMENDATION

Describe the climate-related risks and opportunities identified over the **short, medium,** and **long term.**

BCI'S ALIGNMENT

Rapid changes in policy and regulation to limit greenhouse gas (GHG) emissions is the most prominent risk to our **short-term** total portfolio's performance. This could lead to additional costs to investments exposed to carbon-intensive energy and supply chains, and impact the business models of several sectors in the broader economy. Opportunities exist as technologies and industries that benefit from low carbon economy alignment increase in scale and value.

Over the **medium term,** we expect transition risks and physical risks to materialize. We will explore opportunities that are aligned with our investment approach and meet our requirements as an investor of BCI's scale. Although

Aligned with the Morgan Stanley Capital International (MSCI's) Sustainable Impact[7] research and considering the United Nations Sustainable Development Goals (SDG)[8], the following are key areas we believe could present investment opportunities over the medium-to-long term in the transition to a lower carbon economy:

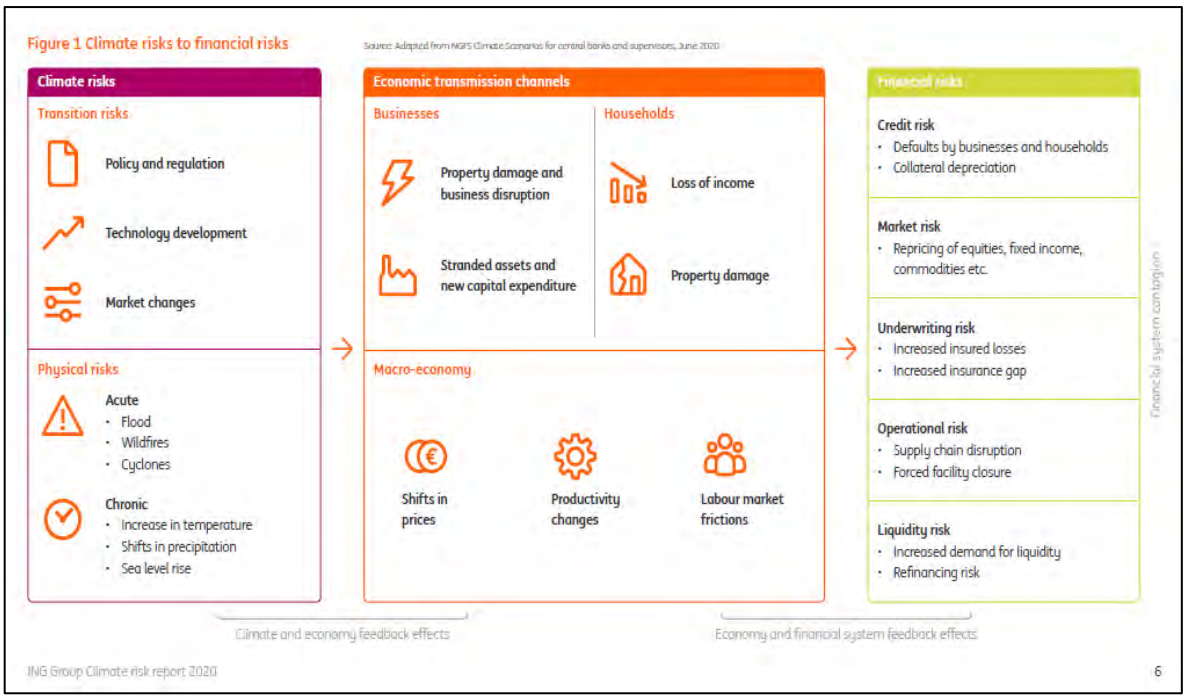
- **Alternative Energy:** Products, services or infrastructure projects supporting the development or delivery of renewable energy and alternative fuels.
- **Energy Efficiency:** Products, services, infrastructure or technologies that proactively address the growing global demand for energy while minimizing effects on the

Source: BCI's Climate Action Plan and Approach to the TCFD Recommendations Document

For more information about British Columbia Investment Management Corporation's (BCI) climate action plan and the approach taken to address the TCFD Recommendations, please click here: https://www.bci.ca/wp-content/uploads/2019/06/BCIs-Climate-Action-Plan-and-Approach-to-the-TCFD-Recommendations.pdf

Example 2

ING Group Climate Risk Report shows how climate-related risks and effects could translate into financial risks:



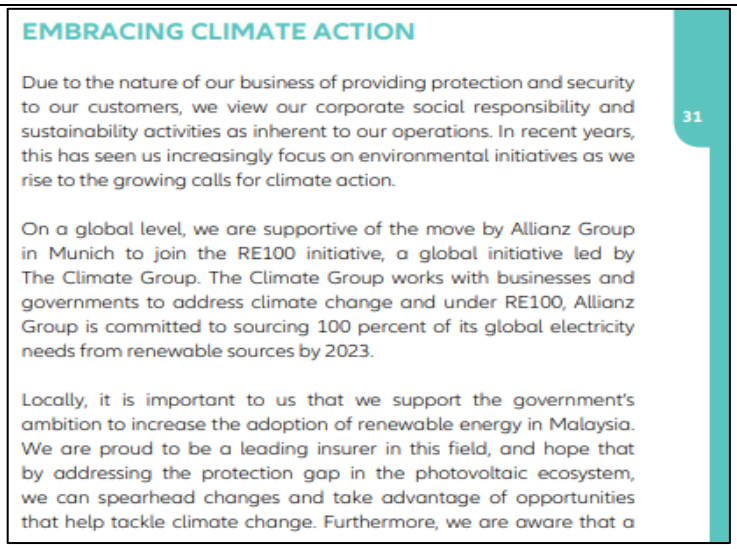
Source: 2020 ING Climate Risk Report

Read more about 2020 ING Climate Risk Report here: https://www.ing.com/Newsroom/News/2020-ING-Climate-risk-report.htm

	Example 3 HSBC Amanah summarises the key categories of transition and physical climate risk, with examples of how their customers might be affected financially by climate change and the shift to a low-carbon economy. *Source: HSBC Amanah, 2020* Read more about 2020 HSBC Amanah TCFD Report here: https://cdn.hsbcamanah.com.my

CLIMATE-RELATED RISK		MAIN CAUSES OF FINANCIAL IMPACT ON CUSTOMERS
TRANSITION	Policy and legal	• Mandates on, and regulation of, existing products and services
	Technology	• Litigation from parties who have suffered from the effects of climate change
	End-demand (market)	• Replacement of existing products with lower emission options • Changing consumer behaviour
	Reputational	• Increased scrutiny following a change in stakeholder perceptions of climate-related action or inaction
PHYSICAL	Acute	• Increased severity of extreme weather events
	Chronic	• Change in precipitation patterns • Rising temperatures

Recommendation S3: **Strategy and Risk Appetite on Climate Change Related Risks and Sustainability Measures**	
Description	Disclose strategy and appetite with regard to climate-related risks and opportunities, and the measures towards sustainability in the financial institution's business activities.
Example(s)	**Examples of minimum disclosures that a financial institution should make to demonstrate its stand or view with regards to sustainability and climate change matters:** **Example 1** Excerpt from Allianz Malaysia's annual report which clearly states their view and commitments on climate-related matters:



EMBRACING CLIMATE ACTION

Due to the nature of our business of providing protection and security to our customers, we view our corporate social responsibility and sustainability activities as inherent to our operations. In recent years, this has seen us increasingly focus on environmental initiatives as we rise to the growing calls for climate action.

On a global level, we are supportive of the move by Allianz Group in Munich to join the RE100 initiative, a global initiative led by The Climate Group. The Climate Group works with businesses and governments to address climate change and under RE100, Allianz Group is committed to sourcing 100 percent of its global electricity needs from renewable sources by 2023.

Locally, it is important to us that we support the government's ambition to increase the adoption of renewable energy in Malaysia. We are proud to be a leading insurer in this field, and hope that by addressing the protection gap in the photovoltaic ecosystem, we can spearhead changes and take advantage of opportunities that help tackle climate change. Furthermore, we are aware that a

31

Source: Allianz Malaysia Annual Report 2019

Read more about Allianz Malaysia's Annual Report 2019 here: https://www.allianz.com.my/documents/144671/850499/ALLIANZ+ANNUAL+REPORT+2019_28042020.pdf

Example 2

Excerpt from Monetary Authority of Singapore's (MAS) Guidelines On Environmental Risk Management (Insurers) that exemplifies the actions a financial institution can do to promote climate-related awareness and build the necessary capability:

Capacity Building

4.12 The insurer should equip its staff, including through capacity building and training, with adequate expertise to assess, manage and monitor environmental risk in a rigorous, timely and efficient manner. The insurer should regularly review such capacity building programmes to incorporate emerging issues relating to environmental risk management.

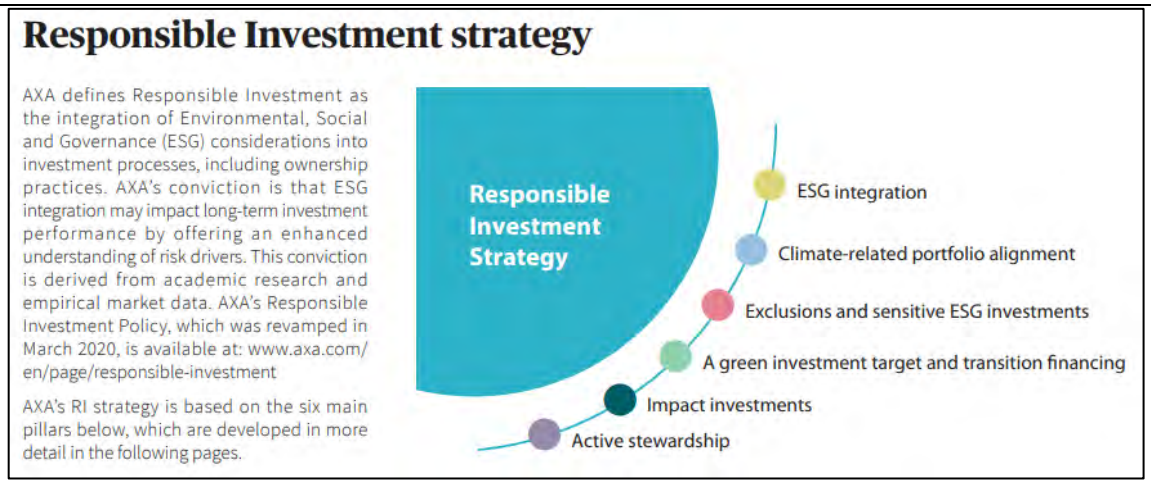
Source: Monetary Authority of Singapore's Guidelines for Environmental Risk Management for Insurers.

Read more at: https://www.mas.gov.sg/regulation/guidelines/guidelines-on-environmental-risk-management-for-insurers

Examples of more advanced / progressive disclosures that financial institutions can make to detail their approach and strategy in terms of mitigating sustainability and climate change challenges:

Example 3

Excerpt from AXA Group's Climate Report 2020 that clearly defines their ESG strategy, with detailed explanation for each of the strategy pillar in the report:

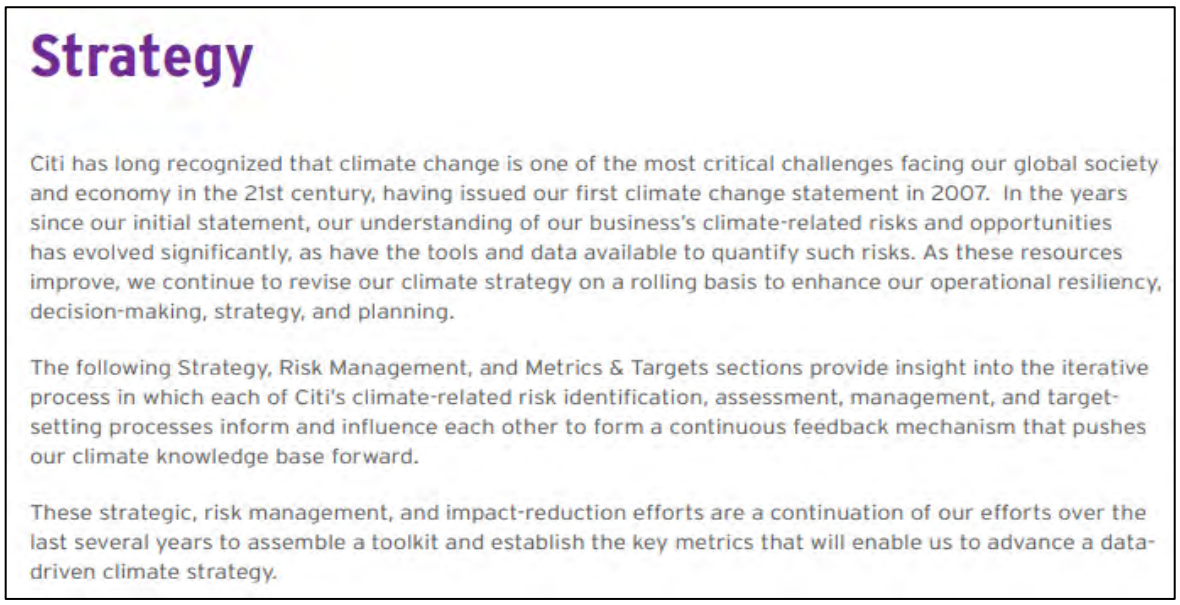


Source: AXA Group Climate Report 2020

Read more about AXA Group's Climate Report 2020: Renewed Action in a Time of Crisis here: https://www-axa-com.cdn.axa-contento-118412.eu/www-axa-com%2F3800520b-ce0f-4aa7-908d-3ec367b21d39_2020_climate_report_axa.pdf

Example 4

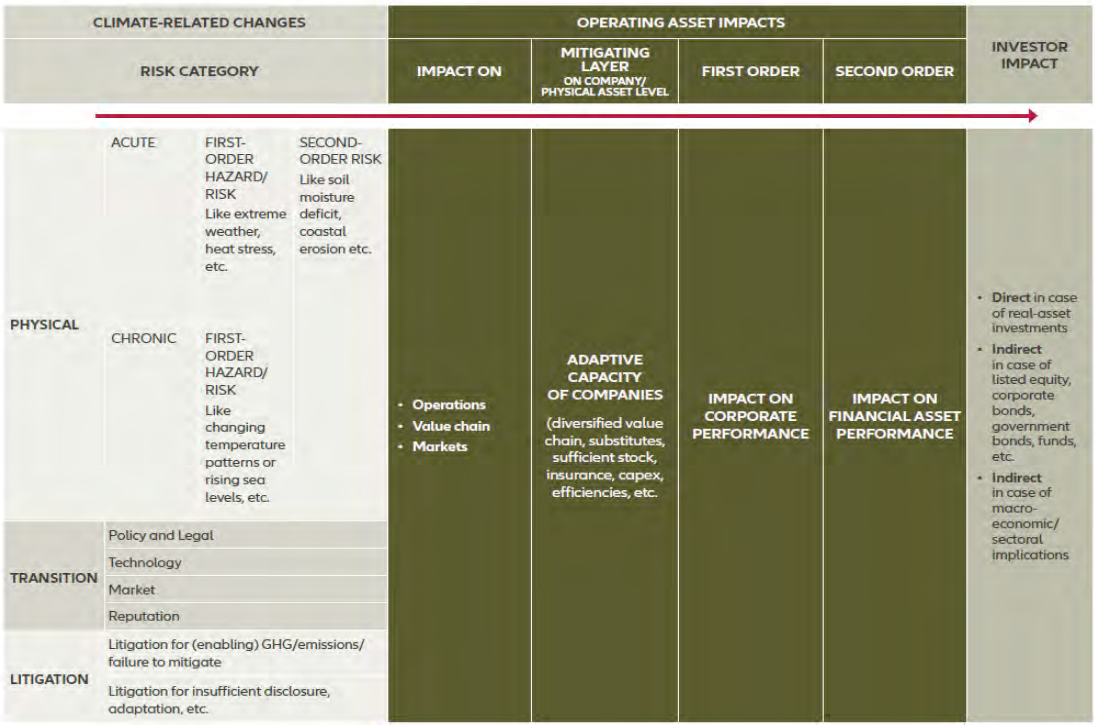
Excerpt from Citi's 2020 TCFD Report by Citigroup that highlights the Strategy, Risk Management, and Metrics & Target that the institution adopts to advance towards a data-driven climate strategy:



Source: Citi's 2020 TCFD Report

Read more about Citi's 2020 TCFD Report: Finance for a Climate-Resilient Future II here: https://www.citigroup.com/citi/sustainability/data/finance-for-a-climate-resilient-future-2.pdf

STRETCH

Recommendation S4: **Scenario Analysis as an Opportunity to Improve Strategic Resilience and Explore Climate Vulnerabilities**	
Description	Perform climate-related scenario analysis to assess potential business implications of climate-related risks and opportunities over time and under different conditions as well as related strategy to manage these.
Example(s)	**Example 1** Allianz Group constantly evaluates climate-related risks and opportunities in their insurance and investment business. They understand that the risks and opportunities emerging today will increase over medium- and long-term, and that climate risk exposure will influence the ability of assets to generate long-term value. Exemplary Illustration of Climate Risks Translation for Investors  To manage potentially detrimental impacts, Allianz has committed to align its proprietary investment portfolio to 1.5°C climate scenarios:

Asset and Business Value Impact under Transition Scenarios (Source: Allianz 2019, excerpt)

GLOBAL		2°C					1.5°C				
		2020	2025	2030	2035	2040	2020	2025	2030	2035	2040
ENERGY	Integrated Oil and Gas	(M)	(M)				(M)				T
ENERGY	Oil and Gas Storage and Transportation										
ENERGY	Coal and Consumable Fuels				T, P	T, P				T, P	T, P
MATERIALS	Fertilizers and Agricultural Chemicals	(T)	(T)	(T)	(T)	(T)	(T)	(T)	(T)	P	
MATERIALS	Aluminium										
MATERIALS	Steel										
INDUSTRIALS	Industrial Conglomerates										
INDUSTRIALS	Airlines	(T)	P				(T)	P			
CONSUMER DISCRETIONARY	Auto Components										
CONSUMER DISCRETIONARY	Automobiles			P	P, T	T		P	P	P, T	P, T
UTILITIES	Electric Utilities	P	(M)		P	P	P	(M)		P	P
UTILITIES	Renewable Electricity				T	T				T	T

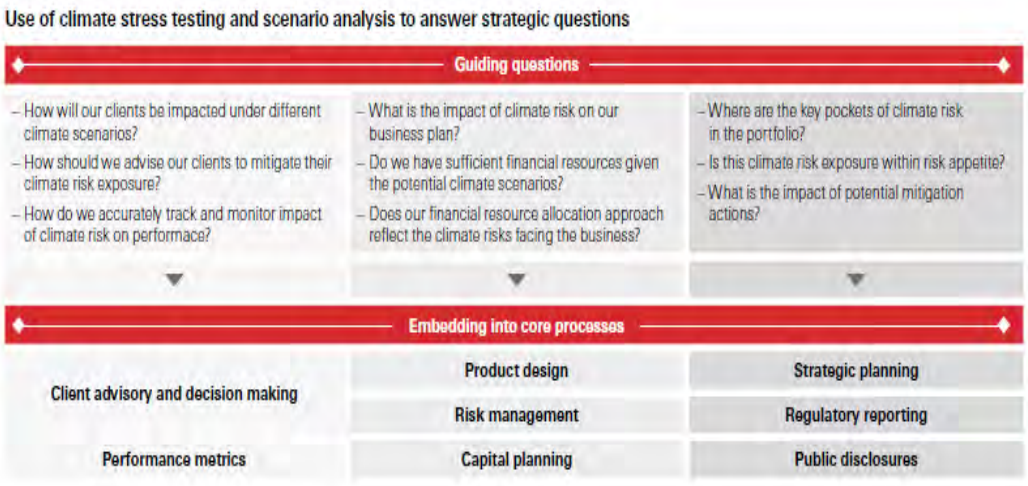
Risk enhancer:	Risk mitigator:	Risk:
P = policy	(P) = policy	Low
T = substitution technology	(T) = little substitution technology	Medium
M = related market forces	(M) = countering market forces	High
		Very high

Source: Allianz 2019 Sustainability Report

Read more about Allianz 2019 Sustainability Report here: https://www.allianz.com/content/dam/onemarketing/azcom/Allianz_com/sustainability/documents/Allianz_Group_Sustainability_Report_2019-web.pdf

Example 2

HSBC launched its internal climate stress testing and scenario analysis pilot exercise in 2020. The exercise was performed on some of HSBC's portfolios that were most exposed to climate risk. The goals of this exercise were to 1) develop the foundations for its climate financial risk stress testing capabilities; and 2) to conduct a preliminary identification of material climate risks within the business.



Scenario selection and time horizons
We are developing our own internal capabilities to define and set parameters for bespoke scenario modelling as part of our scenario analysis framework implementation plan. Our pilot was run on a suite of specific scenarios published by the Network of Central Banks and Supervisors for Greening the Financial System ('NGFS'). The NGFS scenarios test a broad range of possible outcomes and have been created as a starting point for central banks and supervisors.

The NGFS scenarios reflect a range of potential future scenarios that encompass a complex set of social, political and economic decisions[1]. They can be grouped into the following three types:

- Orderly transition – this assumes early introduction of climate policies that gradually become more stringent. Net zero CO_2 emissions will be achieved before 2070, giving a 67% chance of limiting global warming to below 2°C and leading to low physical and transition risks.
- Disorderly transition – this assumes climate policies are not introduced until 2030. Late introduction and limited available technologies mean emissions reductions need to be sharper, which will drive increased transition risks.
- Hot house – this assumes currently implemented policies are preserved. Emissions grow until 2080 leading to 3°C or more of global warming and subsequent severe physical risks.

We developed our scenario test over a 30-year time horizon to ensure that it reflected the long-term effects of transition and physical risks on our customers.

Methodology
Our pilot considered both physical and transition risks under each scenario and reflected name-specific characteristics for wholesale portfolios, as well as property-level characteristics for retail mortgage and commercial real estate portfolios. It is important to note that the NGFS scenarios used do not project business cycles, with GDP growing at a steady rate over the course of each scenario. Over 30 years, a steady growth assumption will have a positive 'rising tide' impact on results and we would expect the outcomes to differ if downturns or alternative GDP assumptions were considered.

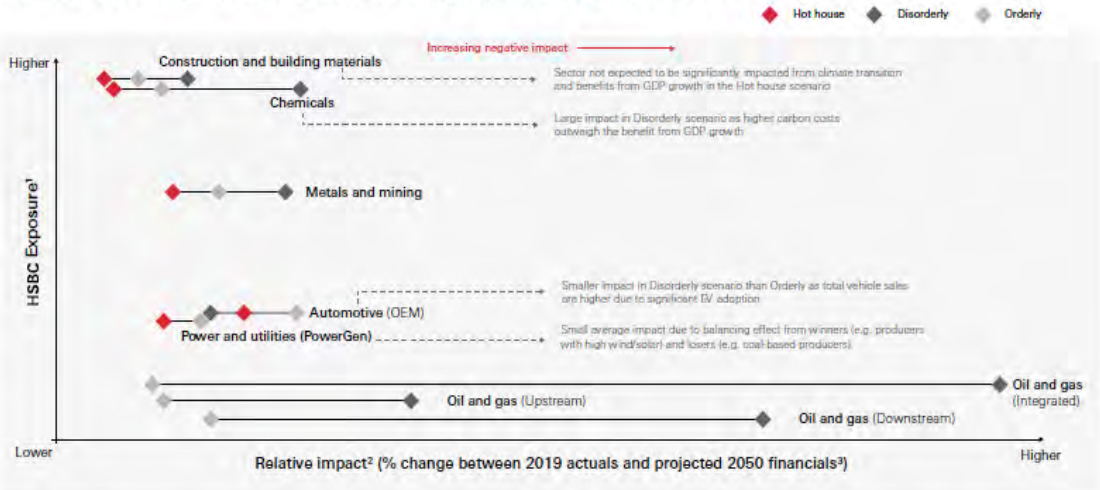
The core pilot analysis was performed assuming customer exposures on a 'static balance sheet', in other words assuming customer exposures would remain static across the scenario. The pilot sample across the wholesale portfolios was heavily concentrated in large public companies where information is readily available, and did not represent every geography. Using insights from the exercise, we are performing analysis to understand what steps we might take to mitigate any risks and seize business opportunities to support customers in their adaptation to climate risk under each scenario.

Over the next two pages we summarise the initial findings of our scenario analysis stress testing pilot for six high transition risk sectors and sub-sectors. The graphic illustrates the level of risk we are exposed to within each portfolio, and maps the loan value (known as exposure at default) within each sector and the projected relative financial impact of transition risk from climate change. All portfolios were measured against a range of potential future scenarios grouped into three types – Orderly, Disorderly and Hot house – unless otherwise stated.
For further details of the scenarios and methodology, see page 13.

Automotive	The pilot was run on automotive original equipment manufacturers ('OEM'), a subset of the automotive sector. The key scenario driver for auto manufacturers is the transition from internal combustion engine ('ICE') vehicles to electric vehicles ('EV'). Significant EV adoption occurs in all scenarios, with higher EV penetration in the high carbon tax scenarios. The main drivers of financial impacts on companies are: the influence of each scenario on total market vehicle sales and EV penetration; current company EV volumes and growth trajectory; and current company financial strength and ability to sustain high research and development costs associated with the transition to electric. Overall, expected credit losses are expected to increase through to 2025 as research and development investments to fund the transition decrease profits and cash flow. Companies with high EV growth trajectory are expected to see smaller negative impact as EVs offset declines in combustion vehicles sales and they achieve EV scale quickly. Companies 'behind' in electric vehicle development or without strong financials to fund its growth face larger negative impacts. In the long-run, companies perform better in scenarios that encourage a larger shift to electric, such as under the Disorderly scenario, as once they overcome the initial investment in EV manufacturing technology, the marginal cost of EV production is expected to be lower than for ICE.
Building and construction	Our building and construction sector comprises primarily construction contractors as well as a small component of building materials companies, such as cement producers. Overall, the portfolio is projected to perform relatively well as construction contractors do not produce significant emissions and hence are not impacted by the introduction of carbon tax. Under all scenarios, they benefit from economic growth which leads to a reduction in expected credit losses. Cement production is a hard to abate high emission sector, and in the Orderly and Disorderly transition scenarios it faces the combined challenge of carbon taxes on high direct emissions from operations and increased costs of abatement. This leads to expected credit losses rising sharply. However, as cement production companies represent a small portion of total sector exposure at default ('EAD') the overall building and construction portfolio performs relatively well in the scenario.
Chemicals	The chemicals sector comprises the production of thousands of different products with different emissions characteristics. Some are emissions-intensive – for example, primary chemicals like ammonia and methanol – and others are not. The primary scenario drivers for this sector are the cost of emissions due to carbon pricing and overall growth in chemicals demand due to ongoing economic expansion. Companies with emissions-intensive products face the greatest transition risk due to higher carbon costs from chemicals production, and higher abatement costs as they invest in technologies and processes to lower their emissions. Companies with lower emissions intensities actually see a slight reduction in expected credit losses in the Hot house and Orderly scenarios as overall chemicals demand growth outweighs the impact of higher carbon costs.
Metals and mining	From a climate perspective, metals and mining comprises of four main sub-sectors – coal mining (thermal and metallurgical), energy transition minerals (for example, lithium, cobalt, copper), steel production and other minerals (including gold, aluminium). There is limited exposure to pure coal companies in our portfolio, however, as would be expected, these companies would likely be significantly hit in Orderly and Disorderly scenarios, reflecting the impact of decarbonisation policies. Companies in energy transition minerals, used in the manufacturing of batteries and wiring, are expected to perform well as economic growth and increasing sales of electric vehicles drive demand. Those in other minerals, which includes precious metals, are also expected to be positively impacted in the scenarios driven by economic growth. However, extraction of energy transition minerals and other minerals is still a carbon intensive process so companies face margin pressure in transition scenarios as the cost of operations increases due to carbon taxes. Steel production, a hard to abate carbon-intensive process, will attract high carbon taxes, hence the Disorderly scenario in particular has a significant negative impact. Overall, expected credit losses for coal and steel companies in the portfolio rise sharply, but more diversified mining companies perform relatively well.

Oil and gas	The primary transition risk facing oil and gas companies is fall in demand for fossil fuels. In the Orderly transition risk scenario early policy action leads to a gradual increase in carbon tax, and an assumed global investment in negative emissions technologies, which offset some impact of continued fossil fuel usage late in the scenario. The transition risk is significantly higher in the Disorderly scenario as a delay in climate polices until 2030 leads to much higher carbon taxes, lower availability of emissions reduction capabilities and an increased need for electrification to meet net zero targets. At the counterparty level, companies with lower production costs perform better as they are able to maintain outputs and margins as demand falls. Companies with significant production of advanced biofuels perform well in both transition scenarios as increased demand for biofuels offsets declines in petroleum refining. Among downstream companies, those with higher spreads between crude oil costs and refined liquids prices are also better positioned. For upstream and integrated companies involved in extraction of oil and gas, those with reserves that have low extraction and production costs can maintain output for longer as demand declines. The midstream sector, which represents a small share of our total oil and gas exposure at default, faces similar impacts as upstream, with demand for transportation of oil and gas moving in line with upstream production. Midstream companies with operations in high-cost production regions can expect larger negative impacts.
Power and utilities	The pilot was run on power generation companies, a subset of the power and utilities sector. The average expected credit losses impact across the sample is limited, but this masks significant threats and opportunities for companies depending on their current power generation mix and financial strength. In both the Orderly and Disorderly scenarios, companies must transition to a world in which generation is primarily from wind and solar by 2050. Companies that already have significant wind and solar power have an advantage and companies with stronger balance sheets are better able to sustain the investment required to grow their renewables capabilities. The sector performs better in the Disorderly scenario than in the Orderly, due to the delay in policy action in the Disorderly scenario until 2030 increasing both demand and prices for electricity.

Consolidated transition risk heat map across six high transition risk sectors – illustrative results of sub-sectors

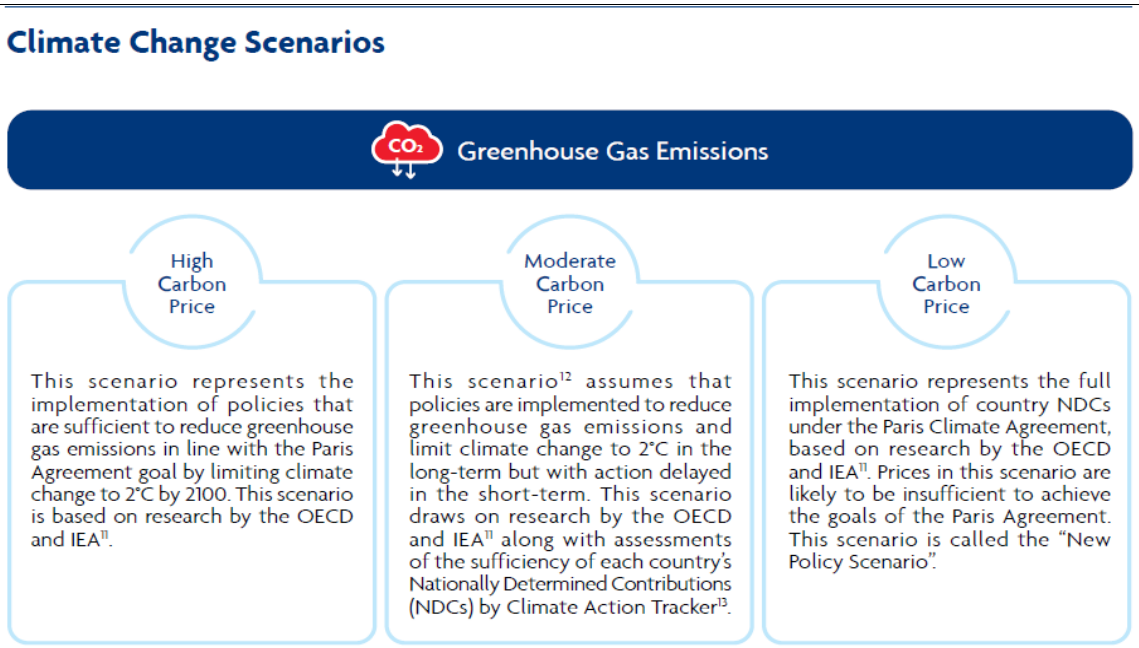


Source: HSBC Holdings plc: Task Force on Climate-related Financial Disclosures ('TCFD') Update 2020

Read more about HSBC's TCFD Update 2020 here:
https://www.hsbc.com/-/files/hsbc/investors/hsbc-results/2020/annual/pdfs/hsbc-holdings-plc/210223-task-force-on-climate-related-financial-disclosures-tcfd-update-2020.pdf

Example 3

UOB completed its pilot climate scenario analysis in 2020, focusing on the impact of transition risk in its portfolio. Partnering an internationally recognised environmental consultancy firm, UOB identified specific carbon intensive segments that were most likely to be impacted by climate change. Subsequently, climate scenario analysis was performed to analyse the impact of transition risk.



Source: UOB Sustainability Report 2020

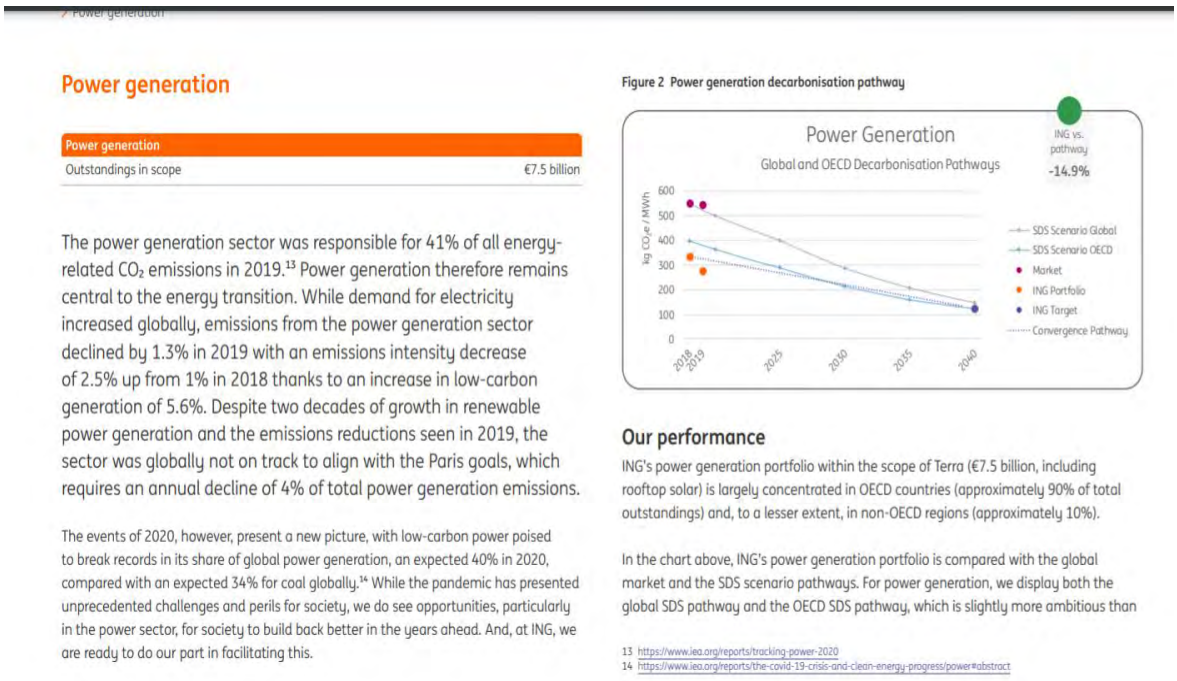
Read more about UOB's Sustainability Report 2020 here: https://www.uobgroup.com/investor-relations/assets/pdfs/investor/annual/UOB_Sustainability_Report_2020.pdf

Example 4

ING Bank uses the Terra approach, which is an inclusive, forward-looking and engagement-driven approach that relies on science-based scenarios and asset level data to align sector portfolios with the Paris Agreement.

The Climate Alignment Dashboard below shows the CO_2 intensity per sector for ING's portfolio as compared to the market and the relevant climate scenario.





Power generation

Power generation	
Outstandings in scope	€7.5 billion

The power generation sector was responsible for 41% of all energy-related CO_2 emissions in 2019.[13] Power generation therefore remains central to the energy transition. While demand for electricity increased globally, emissions from the power generation sector declined by 1.3% in 2019 with an emissions intensity decrease of 2.5% up from 1% in 2018 thanks to an increase in low-carbon generation of 5.6%. Despite two decades of growth in renewable power generation and the emissions reductions seen in 2019, the sector was globally not on track to align with the Paris goals, which requires an annual decline of 4% of total power generation emissions.

The events of 2020, however, present a new picture, with low-carbon power poised to break records in its share of global power generation, an expected 40% in 2020, compared with an expected 34% for coal globally.[14] While the pandemic has presented unprecedented challenges and perils for society, we do see opportunities, particularly in the power sector, for society to build back better in the years ahead. And, at ING, we are ready to do our part in facilitating this.

Figure 2 Power generation decarbonisation pathway

Our performance

ING's power generation portfolio within the scope of Terra (€7.5 billion, including rooftop solar) is largely concentrated in OECD countries (approximately 90% of total outstandings) and, to a lesser extent, in non-OECD regions (approximately 10%).

In the chart above, ING's power generation portfolio is compared with the global market and the SDS scenario pathways. For power generation, we display both the global SDS pathway and the OECD SDS pathway, which is slightly more ambitious than

13 https://www.iea.org/reports/tracking-power-2020
14 https://www.iea.org/reports/the-covid-19-crisis-and-clean-energy-progress/power#abstract

Source: ING Terra Progress Report 2020

Read more about the Climate Alignment Dashboard in ING Bank's Terra Progress Report 2020: https://www.ing.com/MediaEditPage/2020-ING-Terra-progress-report.htm

and TCFD Scenario Analysis here: https://www.spglobal.com/marketintelligence/en/documents/trucost_tfcdscenarioanalysis_carbonear_practiseessentials.pdf

RISK MANAGEMENT

BASIC

Recommendation R1: **Process for Identifying and Assessing Climate-related Risks**	
Description	Disclose how the financial institution looks at existing and emerging regulatory requirements related to climate change and other relevant factors. Disclose the risk classification framework(s) used. Disclose the risk terminology definitions used or existing risk classification framework(s) used.
Example(s)	**Example 1** Société Générale disclosed its public policy engagement as adherence to regulatory requirements. *Public policy engagement* Societe Generale is fully and unambiguously committed to the transition to a more sustainable economy. As one of the world leaders in energy financing, Societe Generale shares the conviction that accompanying and accelerating the energy transition is vital to mitigate climate change. As such Societe Generale acts to promote the appropriate regulation of sustainable finance in Europe, directly or through its participation to trade associations (in particular French Banking Federation, chaired by Societe Generale's CEO Frédéric Oudéa, and European Banking association) in 2019.[13] It is from this perspective that the Group supports policymakers' initiatives to build a regulatory framework for sustainable finance. In particular, a taxonomy of common environmental sustainability criteria at the EU level is necessary for all market participants to give clarity and confidence in the sustainability of investee or borrowing companies or projects. In this respect Societe Generale has provided extensive feedback to the Technical Expert Group of the European Commission on the elaboration of the EU taxonomy, gathering expertise from across the Group on the technical screening indicators. The Group is now part of a working group organised by the UNEPFI and EBF to provide high-level recommendations on the application of the EU taxonomy on a selection of banking products. The Group also contributed to several consultation launched in the sustainable finance domain, such as the *revision of Non-Financial Reporting Directive*[14] and the *Renewed sustainable finance strategy* of the European commission[15], and the consultation on the *Draft ECB Guide on climate-related and environmental risks*[16]. *Source:* Société Générale *Climate Disclosure Report 2020, pg. 13* **Example 2** Société Générale disclosed the identification and consideration of climate-related risks in relation to existing risk factors and provided a summary on how climate-related risk is identified. **4.2.1 Identification and consideration of climate-related risks in relation to existing risk factors** Climate-related Risk identification is part of the overall Group risk identification process. This Group-wide process is continuously performed to identify all risks that are or might be material. It is comprehensive and holistic (it covers all risk types and all Group exposures) and relies on two pillars:

	• The risk-management governance (including key committees such as CORISQs at Group level or BU level, or New Product Committees) that monitor the risk profile per risk type (credit, market, operational…). On top of the monitoring of risks well identified, this governance allows a debate between risk experts and senior management on emerging risks along with opportunities. This debate is fuelled by recent market news, warning signals, etc… • A series of exercises aiming to identify additional risks, e.g. arising from evolutions in: macro-economic or sectorial conditions; financial markets; regulatory constraints; competitors/market pressure; business model (concentration effects) and bank organization evolutions. These additional identification exercises are also organized by risk types but include some identification of cross-risk effects (e.g. market X credit, or credit X operational). For a given risk type, these exercises analyse / segment the Group exposure along several axes (BU / activity / client / product / region…). For the perimeters where this risk is assessed as material, the underlying risk factors are identified. *Source:* Société Générale *Climate Disclosure Report 2020, pg. 26* **Example 3** Barclays provided definitions of risk terminologies and considered climate-related risks in relation to each of the existing Principal Risk (Credit Risk). *Note: For Barclays, processes for identifying, assessing, managing and integration of risks were disclosed together. As such, there are overlapping disclosures for Barclays' Identification, Assessment and Managing Risks. Additionally, Barclays disclosed Identification, Assessment and Managing Risks for every existing risk type (Credit Risk, Market Risk, etc.).* Credit risk **Definition** The risk of loss to the Group from the failure of clients, customers or counterparties, including sovereigns, to fully honour their obligations to the Group, including the whole and timely payment of principal, interest, collateral and other receivables. **Identification** We start risk identification by highlighting sectors particularly susceptible to climate change risk. These are broadly divided into three categories: elevated, moderate and low risk. Elevated risk sectors These sectors have been identified through an analysis of Barclays Industrial Classifications by portfolio and benchmarked against Moody's and other external sources, with additional input from subject matter experts. Our rationale for choosing these sectors and assessing exposure to them, year on year, is detailed opposite. It highlights the factors that drive the sectors' susceptibility to climate change risk. For the basis of preparation for elevated risk exposure breakdown (chart below), please refer to page 31 in the Metrics and targets section. *Source: Barclays TCFD Report pg. 17*

Recommendation R2: **Process for Managing Climate related Risks**	
Description	Disclose the financial institution's risk management processes and controls. Disclose the identities of individual(s)/function(s) responsible for oversight of climate-related risks and its relationship with the business operations.
Example(s)	**Example 1** Barclays disclosed the description of risk management process and controls.



Each climate-related risk in elevated sectors is assessed by risk drivers and impacts. Risk drivers and impacts were designed internally and are based on rating agencies' climate change assessments, recommendations of the TCFD and our involvement in UNEP FI's TCFD Banking Pilot Project Phase II.

Building on identified elevated risk sectors, in 2019, a Climate Change Risk Inventory was introduced to map climate-related risks across Credit, Market, Treasury and capital, and Operational risks and provide appropriate mitigation measures where necessary.

In 2020, the Climate Change Risk Inventory was evolved into the Climate Change Risk Register to align with the Group's Risk Register Taxonomy. In particular, drivers for each risk were identified across climate risk types (physical, transition and connected) in addition to macroeconomic and climate variables. The Register is feeding into scenario design for the climate internal stress test.

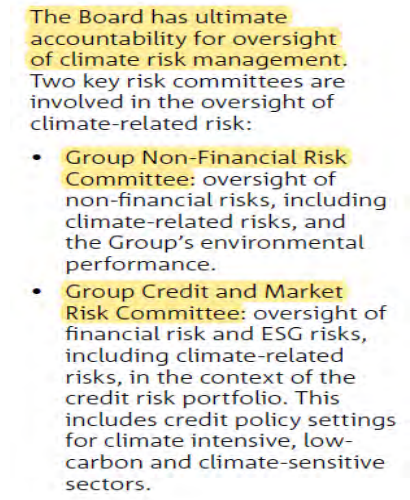
Sovereign risk assessment

In 2020 a climate sovereign risk assessment was introduced, which included a risk factors matrix incorporating physical, transition and connected risk factors. It was designed to support the internal stress test on Climate Change and is being introduced as part of our ongoing risk review as part of the CCFOR Policy.

Source: Barclays TCFD Report 2020 pg. 18

Example 2

National Australia Bank (NAB) disclosed the key committees established for oversight of its climate risk management.



The Board has ultimate accountability for oversight of climate risk management. Two key risk committees are involved in the oversight of climate-related risk:

- Group Non-Financial Risk Committee: oversight of non-financial risks, including climate-related risks, and the Group's environmental performance.
- Group Credit and Market Risk Committee: oversight of financial risk and ESG risks, including climate-related risks, in the context of the credit risk portfolio. This includes credit policy settings for climate intensive, low-carbon and climate-sensitive sectors.

Source: National Australia Bank (NAB)

Recommendation R3: **Process for Integrating (i) Process for Identifying and Assessing Climate-related Risks and (ii) Process for Managing Climate-related Risks; into Overall Risk Management.**	
Description	Disclose the integration of processes for identifying, assessing, and managing climate-related risks into overall risk management. Disclose processes for prioritising climate-related risks, including how materiality determinations are made within the financial institution.
Example(s)	**Example 1** UBS embedded climate-related risks into its risk appetite framework and operational risk appetite statement. They have also developed climate-related standards in the energy and utilities sectors.

The physical and transition risks from a changing climate contribute to a structural change across economies and therefore affect banks and the financial sector as a whole. In order to protect our clients' and our own assets from climate-related risks, we continue to drive the integration of climate-related risk into our standard risk management framework.

UBS manages climate risks in our own operations, balance sheet, client assets and supply chain. We are embedding climate risk into the UBS risk appetite framework and operational risk appetite statement. In 2020, we further integrated climate risk in risk identification, management stress testing methodology and reporting processes across the organization. We have consistently reduced our exposure to carbon-related assets and continued our multi-year efforts to develop methodologies that enable more robust and transparent disclosure of climate metrics. This work will continue our efforts to ensure we are prepared to respond to increased regulatory requirements on climate risk, are aligning our disclosure with the TCFD recommendations and collaborate within the industry to close gaps.

Climate-related standards in the energy and utilities sectors

Coal		Not providing project-level finance to new coal-fired power plants globally Only supporting financing to transactions of existing coal-fired operators (>30% coal reliance) who have a transition strategy in place that aligns with a pathway under the Paris Agreement, or if the transaction is related to renewable energy
	Coal mining	Not providing financing where the stated use of proceeds is for greenfield[1] thermal coal mines Continuing to severely restrict lending and capital raising to the coal mining sector
	Mountaintop removal (MTR)	Not providing financing to coal-mining companies engaged in MTR operations
Oil and gas	**Arctic oil and oil sands**	Not providing financing where the stated use of proceeds is for new offshore oil projects in the Arctic or greenfield[1] oil sands projects Only provide financing to companies that have significant reserves or production in arctic oil and / or oil sands (>30% of reserves or production) where the stated use of proceeds is related to renewable energy or conventional oil and gas assets
	Liquefied natural gas (LNG) and ultra-deepwater drilling	Transactions directly related to LNG infrastructure assets are subject to enhanced environmental and social risk (ESR) due diligence considering relevant factors such as management of methane leaks as well as the company's past and present environmental and social performance Transactions directly related to ultra-deepwater drilling assets are subject to enhanced ESR due diligence considering relevant factors such as environmental impact analysis, spill prevention and response plans, and the company's past and present environmental and social performance

1 Greenfield means a new mine / well or an expansion of an existing mine / well which results in a material increase in existing production capacity.

Source: UBS SR 2020 pg. 33: Climate risk management, Climate-related standards in the energy and utilities sectors

Example 2

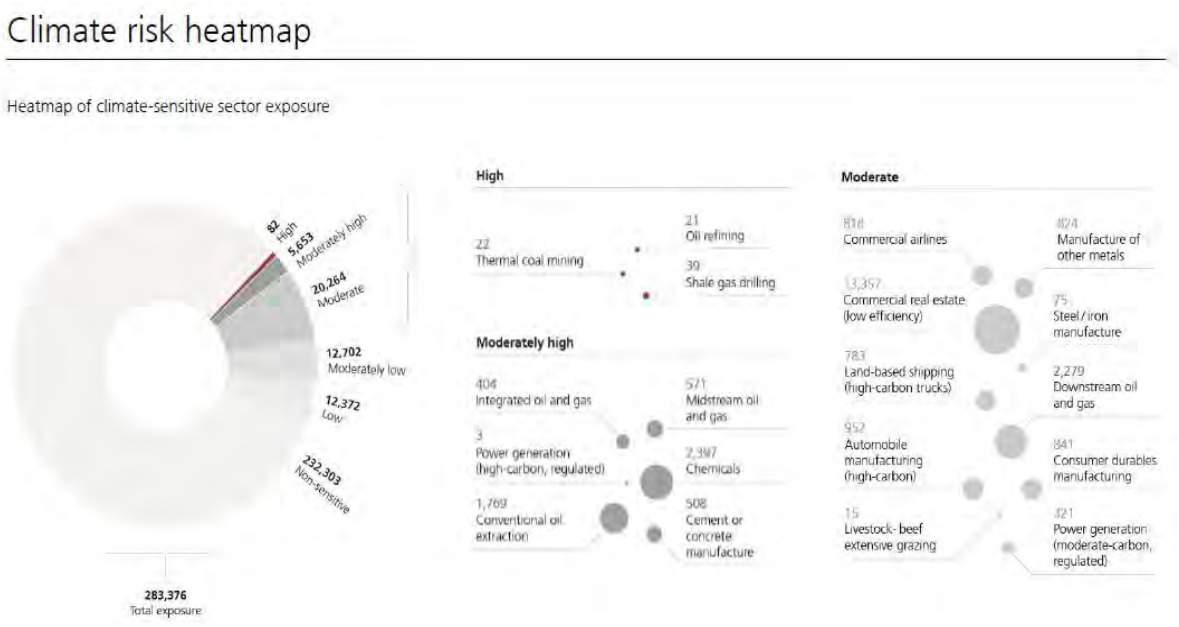
UBS piloted a climate risk heatmap to take a materiality-driven approach and rates cross-sectoral credit risk exposures to climate sensitivity, from high to low, through a risk segmentation process.

Climate risk heatmap

To inform the further development of its climate risk management strategy, UBS has piloted a transition risk heatmap, developed in collaboration with the UNEP FI TCFD working group. The heatmap enables UBS to take a materiality-driven approach to further inform its climate risk management strategy by:

- helping to identify concentrations of exposure with high climate risk vulnerability, which, in turn, enables resource prioritization for detailed bottom-up risk analysis;
- supporting a client-centric strategy that prioritizes clients who may benefit from UBS products and services in support of their transition strategies; and by
- providing decision-useful information in internal reports to executive and board leadership and external disclosure to stakeholders.

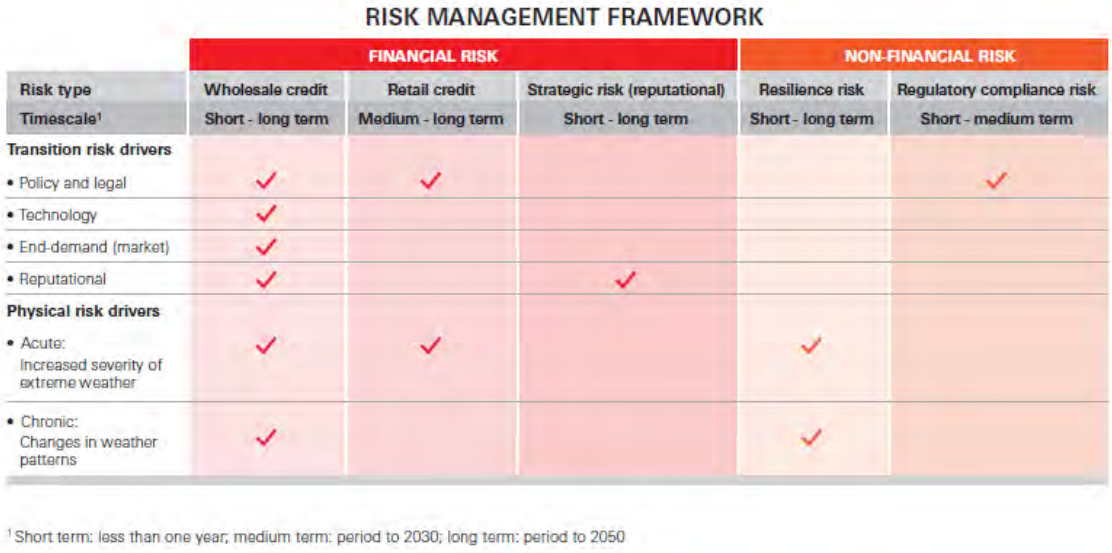
The heatmap rates cross-sectoral credit risk exposure to climate sensitivity, from high to low, through a risk segmentation process. These ratings are based upon climate risk ratings determined by ratings agencies, regulators and expert consultants. The working group discussed how to group companies with similar risk characteristics into risk segments and rate those segments according to their vulnerability to climate policy, low-carbon technology risks, and revenue / demand shifts under an aggressive approach to meeting the well below 2°C Paris goal. The next steps for UBS are to pilot the physical risk heatmap methodology, also developed with the UNEP FI TCFD working group, and to examine the applicability of the heatmap methodology in other traditional risk categories.



Source: UBS SR 2020 pg. 37: Climate risk heatmap

Example 3

HSBC Amanah's approach to climate risk management is guided by HSBC's Group-wide risk management framework, which follows five simple steps: define and enable, identify and assess, manage, aggregate and report, and govern.



RISK MANAGEMENT FRAMEWORK

	FINANCIAL RISK			NON-FINANCIAL RISK	
Risk type	Wholesale credit	Retail credit	Strategic risk (reputational)	Resilience risk	Regulatory compliance risk
Timescale[1]	Short - long term	Medium - long term	Short - long term	Short - long term	Short - medium term
Transition risk drivers					
• Policy and legal	✓	✓			✓
• Technology	✓				
• End-demand (market)	✓				
• Reputational	✓		✓		
Physical risk drivers					
• Acute: Increased severity of extreme weather	✓	✓		✓	
• Chronic: Changes in weather patterns	✓			✓	

[1] Short term: less than one year; medium term: period to 2030; long term: period to 2050

Source: HSBC Amanah, 2020

STRETCH

Recommendation R4: **Process for Identifying and Assessing Climate-related Risks**	
Description	Disclose the financial institution's risk management processes used to identify and assess climate-related risks. Disclose the financial institution's climate-related risks and their significance within existing risk categories such as credit, market, operational, liquidity risk. Disclose the financial institution's processes for assessing the potential size and scope of identified climate-related risks. Disclose key sectors in the financial institution's portfolio that are identified as being highly exposed to climate risk. Set out the financial institution's risk management controls or actions in managing impacts from direct climate-related risks (i.e. through own operations).
Example(s)	**Example 1** Société Générale provided disclosures of how climate-related risks have been integrated into its existing risk categories such as credit, market, operational, insurance and liquidity risks. Société Générale has also provided comprehensive disclosures for each existing risk categories with corresponding physical and transition risks.

Table 5: Identified climate-related risks impact on existing categories of risk

Risk	Physical	Transition
Credit	Physical risk could increase customer' probability of default by directly damaging their assets in affected areas (as physical events could hit production facilities, warehouses, services and decisions centres) and indirectly impacting their business model by disturbing their supply chain, commercial routes or markets. In case of the customer default, physical risks could also make the Group ability to recover part of their commitment more difficult, for example through lower collateral valuations in real estate portfolios as a result of increased flood risk.	Transition risks, for sectors affected by low-carbon transition policies (higher price of carbon for example), could also impact customers' ability to generate revenues and meet their financial commitments if they do not take measure to adapt their business models or if they cannot finance the needed adaptations measures (as research and developments to develop low-carbon alternatives to products and services). Transition risks could also indirectly impact customers' assets valuation, for example by impacting the valuation of fossil fuels reserves such as coal or oil, whose value is expected to fall in a low-carbon economy perspective (stranded assets phenomenon). This could particularly impact collateral valuation.
Market	Severe physical events may lead to shifts in market expectations and could result in sudden repricing. For example, hurricanes impacting companies' premises in certain areas may impact market expectations on their ability to generate revenues, and so their share value.	Transition risks may generate an abrupt repricing of securities and derivatives, for example for products associated with industries affected by asset stranding.
Operational	Physical events could impact Societe Generale's own sites and the Group ability to keep on providing services to its customers.	Non-compliance with transition-related disclosure obligations could lead to legal proceedings and fines. Non-compliance with public commitments towards low-carbon economy transition could also generate a reputational risk who might stigmatize banks and generate a loss of revenues caused by customer shift. An additional reputational risk could also exist if a commitment would be perceived by external stakeholders as inappropriate or insufficient.
Insurance	Multiplication of physical events and of higher severity could impact IARD activity (*Incendies, Accidents et Risques Divers*) of which it is the object.	
	Physical and transition risks could impact the value of the assets in which insurance activities invest the money collected. As a result, a drop of those assets values because of transition risks could impact the ability of insurance activities to deal with its financial commitments.	

Source: Société Générale *Climate Disclosure Report 2020, pg. 27*

Example 2

UBS tested a methodology that combines quantitative bottom-up borrower-level analysis with top-down portfolio segmentation to analyse for credit-rating impacts under a 2-degree climate scenario, for their Power utilities and Oil & gas portfolios.

Phase I: Power utilities

UBS pilot tested a methodology developed with Oliver Wyman and 16 banks, as part of the UNEP FI TCFD working group, on its power utilities portfolio (power). The methodology combines quantitative bottom-up borrower-level analysis with top-down portfolio segmentation, to analyze for credit-rating impacts under a 2 degree climate scenario. A sample of over

Phase II: Oil and gas

In 2020, UBS pilot tested the methodology on its 2020 oil and gas (O&G) portfolio. This time, testing against a range of 1.5°C pathways, including an orderly and immediate transition, a disorderly and delayed transition, and a disorderly transition that assumed low reliance on carbon dioxide removals (CDR). The scenarios were developed in partnership with the IAMC and were also the basis for the reference scenarios issued by the Network for Greening the Financial System (NGFS).

According to our assessment, integrated O&G, as large-cap companies, are well equipped to forecast and strategize for their role in the transition to a low-carbon economy. Large integrated O&G companies are also considered to have control over major reserves, making them some of the last oil drillers in 2040 that supply residual oil demand.

Key findings supported earlier analyses: no significant risk to UBS was identified. Expected loss impacts to UBS exposure in the sector ranged from 0.4% to 1.1% of the total sectoral exposure in a delayed transition scenario and low-CDR scenario respectively, in 2040. In addition, the weighted average profitability and default (PD) impacts by scenario show greater credit impacts in a CDR scenario, followed by an immediate action scenario, as shown in the next graph.

Source: UBS SR 2020 pg. 35: UNEP FI TCFD Working Group for Banks

Example 3

Barclays disclosed the identification of impacts of climate-related risks on the bank's portfolio and made reference to industry or internationally-recognised frameworks for identification of risks (please refer to elevated risk sectors in illustration below).

Note: For Barclays - processes for identifying, assessing, managing and integration of risks were disclosed together. As such, there are overlapping disclosures for Barclays' Identification, Assessment and Managing Risks. Additionally, Barclays disclosed Identification, Assessment and Managing Risks for every existing risk type (Credit Risk, Market Risk, etc.).

Credit risk

Definition

The risk of loss to the Group from the failure of clients, customers or counterparties, including sovereigns, to fully honour their obligations to the Group, including the whole and timely payment of principal, interest, collateral and other receivables.

Identification

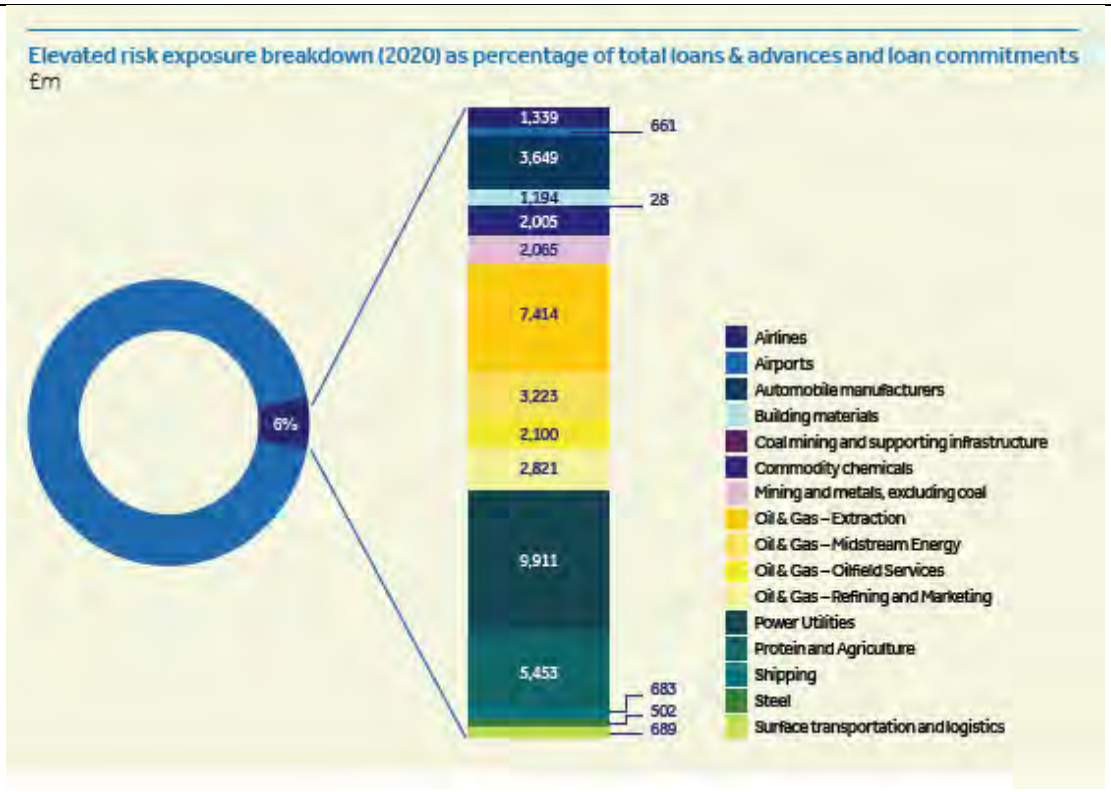
We start risk identification by highlighting sectors particularly susceptible to climate change risk. These are broadly divided into three categories: elevated, moderate and low risk.

Elevated risk sectors

These sectors have been identified through an analysis of Barclays Industrial Classifications by portfolio and benchmarked against Moody's and other external sources, with additional input from subject matter experts.

Our rationale for choosing these sectors and assessing exposure to them, year on year, is detailed opposite. It highlights the factors that drive the sectors' susceptibility to climate change risk.

For the basis of preparation for elevated risk exposure breakdown (chart below), please refer to page 31 in the Metrics and targets section.


Elevated risk exposure breakdown (2020) as percentage of total loans & advances and loan commitments
£m
6%
1,339
661
3,649
1,194
28
2,005
2,065
7,414
3,223
2,100
2,821
9,911
5,453
683
502
689
Airlines
Airports
Automobile manufacturers
Building materials
Coal mining and supporting infrastructure
Commodity chemicals
Mining and metals, excluding coal
Oil & Gas – Extraction
Oil & Gas – Midstream Energy
Oil & Gas – Oilfield Services
Oil & Gas – Refining and Marketing
Power Utilities
Protein and Agriculture
Shipping
Steel
Surface transportation and logistics

Elevated risk sector rationale	
Airlines Airports	More stringent air emission and carbon regulations, requiring high levels of capital investment and Research & Development (R&D) expenditure.
Automobile manufacturers	Policy pressure to cut emissions to meet regional emission requirements, requiring high levels of capital investment and R&D expenditure. Phase out of fossil fuel vehicles around the world (e.g. ban on sales of internal combustion engine vehicles).
Building materials	Policy pressure to cut emissions, in particular, for cement producers.
Coal mining and supporting infrastructure	Reduction in demand of thermal coal, as utilities transition away from fossil fuel. More stringent air emissions, resulting in higher levels of capital investment.
Commodity chemicals	Increasing environmental regulation, including carbon regulations. The increasing efforts to eliminate single-use plastics and improve recycling to prevent marine pollution could also impact demand for products used in plastic manufacture.
Mining and metals, excluding coal	Rising costs as a result of tighter environmental regulations and increasing water stress.
Oil & Gas – Extraction Oil & Gas – Midstream Energy Oil & Gas – Oilfield Services Oil & Gas – Refining and Marketing	Policy pressure to cut emissions, exposure to carbon taxes and overall increasing environmental regulation of operations and restrictions on access to new resources. Over time, falling demand for fossil fuels.
Power Utilities	Policy pressure to cut emissions, leading to increased capital expenditure costs, plus potential exposure to carbon taxes.
Protein and Agriculture	Shifts in environmental regulations may raise costs of production for animal protein. Volatile weather conditions and increased ESG regulation in the food sector will affect agriculture. Fall in meat and dairy consumption due to changes in societal behaviours.
Shipping	Policy pressure to cut emissions, requiring higher levels of capital investment.
Steel	Being an energy-intensive sector, the sector is exposed to the policy pressure to cut emissions and evolving air pollution regulation.
Surface transportation and logistics	Policy pressure to cut emissions, requiring high levels of capital investment.

Source: Barclays TCFD Report pg. 17

Example 4

Société Générale disclosed the identification of impacts of climate-related risks on the bank's portfolio and made reference to industry or internationally-recognised frameworks for identification of risks.

4.3.1 Climate Vulnerability Indicator: transition risk impact on corporate credit risk using scenario analysis

The impact of transition risk on the credit risk of Societe Generale's corporate clients has been identified as the main climate-related risk for the Group. As a result, this has been our first area of focus while implementing a climate-related risk framework. In order to measure this impact, the Group is gradually implementing a Climate Vulnerability Indicator that aims at reinforcing the credit analysis on the most exposed counterparties.

Societe Generale is engaged in the sensitivity analysis on climate risk organized by the *European Banking Authority* (EBA) and the French banking regulator (*Autorité de Contrôle Prudentiel et de Résolution - ACPR*) in 2020, which focuses on transition risk impact on financial institutions. It is an opportunity to test and keep improving our methodologies (described below), with a collective approach and inputs from our peers and regulators on the subject.

The approach adopted by Societe Generale for measuring transition risks is inspired by the United Nations Environment Programme Initiative (UNEP FI), to which Societe Generale has contributed along with 15 international banks in 2018. In a nutshell, this approach aims to assess transition risks by quantifying the marginal impact of the climate scenario on the credit rating of borrowers for a set of priority sectors, under the assumption that the borrower does not adapt to this scenario. This climate scenario is validated every year by the CORISQ following the proposal of the Economics and Sector Research department.

Source: Société Générale *Climate Disclosure Report 2020, pg. 30*

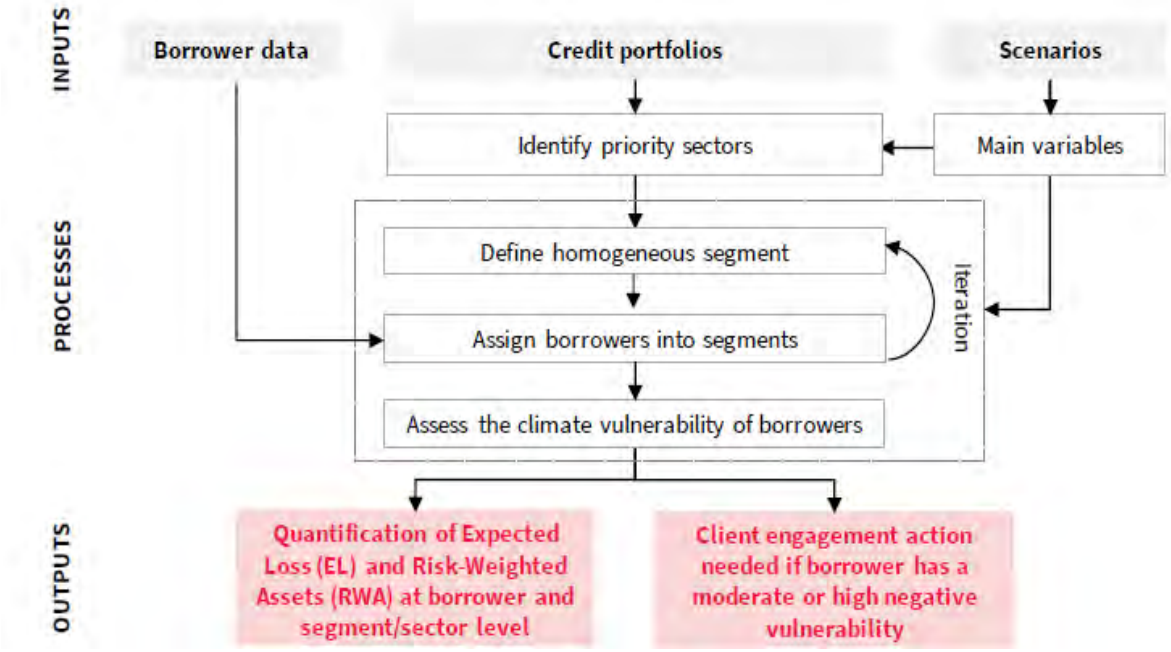
Example 5

Société Générale disclosed its step-by-step approach as well as processes for assessing climate-related risks.

The evaluation of transition risk is conducted as per the 5 steps below and summarised in Figure 6.

1. ***Identify priority sectors:*** taking into account the materiality of Societe Generale's exposure, the sectors affected by the transition risk identified as priorities include as of now: Oil & Gas, Power Utilities, Metals & Mining, Transportation (including Automotive, Shipping, Aircraft) and Commercial Real Estate. This first set of sectors has been validated by the CORISQ, with the opportunity to be extended in the future (with CORISQ validation)
2. ***Choice of a single climate scenario:*** such scenario integrates the effects of policy measures to limit global warming below the Paris Agreement threshold. The scenario focuses on clarifying the evolution of certain variables (e.g. carbon tax, investments in new technologies, changes in energy prices) which are detailed at the level of each activity sector in an associated geographical area (detailed on the chosen scenario provided in section 2.2.4).
3. ***Define homogeneous segments:*** The selected sectors are then sub-divided into segments, which consist in groups of borrowers with a homogenous sensitivity to the transition scenario in terms of credit risk. This homogeneity is defined by experts in relation to the main transition risk factors given by the scenario. The assignment to one segment relies on expert decision tree and based on objective sectoral and regional criteria (e.g. energy mix for electricity producers, US and EU utility regulatory differences).
4. ***Assign borrowers into segments:*** Most borrowers in the sectors defined and above a certain threshold of exposure are then assigned into a segment, thanks to the borrowers' data (publicly available or specifically asked to the client when missing).
5. ***Assess the "climate vulnerability" of borrowers:*** The borrowers automatically inherit the level of sensitivity of the segment to which they belong, materialised by a climate **vulnerability indicator** (CVI). The CVI is represented by a 7-level scale as shown on Figure and corresponds to the marginal impact on the counterparty current internal rating over a 20-year time horizon of the selected transition scenario. It is evaluated in parallel to the internal rating (which is based on a 1-year probability of default), and under the assumption that the counterparty does not take any adaptation measures.

Figure 6: Methodology for assessing transition risks on the credit portfolio



Source: Société Générale *Climate Disclosure Report 2020*

Example 6

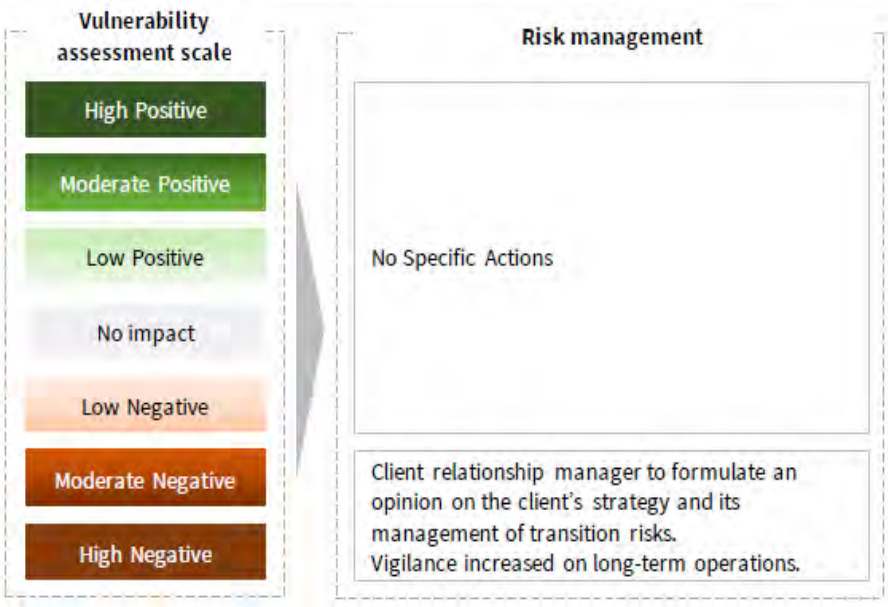
Société Générale disclosed evaluation undertaken by the appropriate governance function(s) and results of assessment of climate-related risks based on a vulnerability assessment scale.

This evaluation is reviewed by the appropriate governance: the CVI calculated according to this methodology is proposed by the first line of defence (LoD1), which can adapt the evaluation (and then modify the CVI) according to the borrower's specifics. It is then validated by the Risk Department as second line of defence (LoD2).

The CVI lead to 2 types of outputs:

- **Quantifying an impact on credit risk metrics.** Once calculated, borrowers' vulnerability can be translated into a quantified impact in terms of Expected Losses and Risk-Weighted Assets. This is done thanks to the sector experts' opinion on the vulnerability identified and expressed in average rating degradation (for each of the 7 CVI levels is associated a rating degradation that can be applied to the related clients). In a bottom-up process, this quantification exercise can then be done at segment and sector level.
- **A list of clients vulnerable to transition risks for which the strategy will be examined.** For borrowers that are identified as vulnerable or highly vulnerable, the client relationship manager formalises an opinion on the client's adaptation strategy as regards to the transition risk. For long-term exposure, attention is paid on the financing risk at maturity. Vigilance is also paid to the timeliness of the client's strategic shift compared to that of the scenario. Indeed, in the case of a slow adaptation, the borrower could find itself in difficulty to raise the liquidity needed to finance its transformation plans.

Figure 7: Vulnerability Assessment Scale



Source: Société Générale *Climate Disclosure Report 2020, pg. 31 and 32*

Example 7

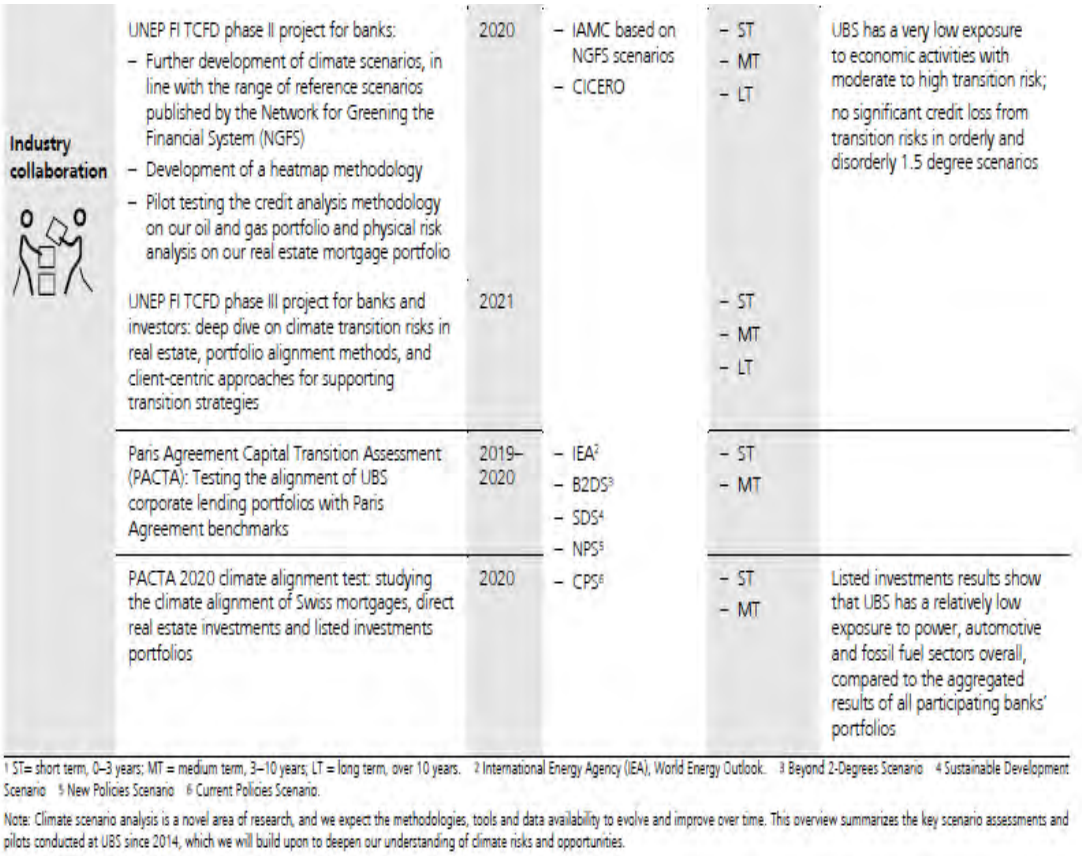
UBS disclosed how they used climate stress-testing to identify, measure, monitor, manage and report on climate-related risks.

Scenario analysis

We have been using scenario-based approaches since 2014 to assess our exposure to physical and transition risks stemming from climate change. These early in-house scenario analyses have been followed by a series of assessments performed through industry collaborations in order to harmonize approaches in addressing identified methodological and data gaps.

We have performed both top-down balance sheet stress testing (across the firm), as well as targeted, bottom-up analysis of specific sector exposures covering short-, mid-, and long-term time horizons. The table below summarizes the UBS scenario assessments performed to date.

	Assessment	Year	Scenarios used	Time horizon[1]	Outcomes
In-house scenario analysis	UBS climate stress test to assess firm-wide vulnerability to climate change (impacts to balance sheet, operational income and physical assets)	2014	Climate scenario developed in-house	– ST – MT	Moderate financial impact in line with other stress scenarios, such as those that foresee an oil shock
	Assessment of physical climate hazard impacts on mortgage portfolios secured by real estate	2015		– ST – MT	
	Assessment of climate transition risk impacts (changing oil, gas and coal prices, implying an increased carbon price) on oil, gas and electric utilities credit portfolios	2015		– ST – MT	
	Natural Capital Finance Alliance / United Nations Environment Programme Finance Initiative (UNEP FI): Assessment of the impact of increased drought on productivity of borrowers in UBS energy credit portfolio	2017		– ST – MT	
	UNEP FI TCFD phase I project for banks: Development of a credit analysis methodology that uses integrated assessment modeling (IAM) climate scenarios; pilot testing the methodology on UBS power utilities credit portfolio	2018–2019		– ST – MT	



Industry collaboration	UNEP FI TCFD phase II project for banks: – Further development of climate scenarios, in line with the range of reference scenarios published by the Network for Greening the Financial System (NGFS) – Development of a heatmap methodology – Pilot testing the credit analysis methodology on our oil and gas portfolio and physical risk analysis on our real estate mortgage portfolio	2020	– IAMC based on NGFS scenarios – CICERO	– ST – MT – LT	UBS has a very low exposure to economic activities with moderate to high transition risk; no significant credit loss from transition risks in orderly and disorderly 1.5 degree scenarios
	UNEP FI TCFD phase III project for banks and investors: deep dive on climate transition risks in real estate, portfolio alignment methods, and client-centric approaches for supporting transition strategies	2021		– ST – MT – LT	
	Paris Agreement Capital Transition Assessment (PACTA): Testing the alignment of UBS corporate lending portfolios with Paris Agreement benchmarks	2019–2020	– IEA[2] – B2DS[3] – SDS[4] – NPS[5]	– ST – MT	
	PACTA 2020 climate alignment test: studying the climate alignment of Swiss mortgages, direct real estate investments and listed investments portfolios	2020	– CPS[6]	– ST – MT	Listed investments results show that UBS has a relatively low exposure to power, automotive and fossil fuel sectors overall, compared to the aggregated results of all participating banks' portfolios

1 ST= short term, 0–3 years; MT = medium term, 3–10 years; LT = long term, over 10 years. 2 International Energy Agency (IEA), World Energy Outlook. 3 Beyond 2-Degrees Scenario 4 Sustainable Development Scenario 5 New Policies Scenario 6 Current Policies Scenario.

Note: Climate scenario analysis is a novel area of research, and we expect the methodologies, tools and data availability to evolve and improve over time. This overview summarizes the key scenario assessments and pilots conducted at UBS since 2014, which we will build upon to deepen our understanding of climate risks and opportunities.

Source: UBS SR 2020 pg. 34: Scenario Analysis

Example 8

Société Générale disclosed its key risk management processes and controls and set out risk management controls or actions in managing impacts from direct climate-related risks (i.e. via its own operations).

4.3. Processes for identifying and managing climate-related risks

This remaining subsection present four processes in place to identify, assess and manage climate-related risks. As shown on Table 6, these processes examine a range of transition and physical risk impacts on a variety of risk factors and portfolios, and are at various stage of maturity.

Two already operational processes are monitoring transition risk impact on credit and reputational risks. One assesses the long-term impact of transition risk on corporate client credit risk using scenario analysis, while another looks at the short-term impact of transition risk on reputational risks using the Group's normative standards set out in its E&S policies. Those two processes are nonetheless intertwined as they rely on similar input data, scenarios, processes and, in some cases, people within the bank.

Societe Generale also assesses physical risks on its on assets and operations within its operational risk framework.

The assessment of physical risks on the Group's corporate and retail loan books as well as the impact of climate-related risks on sovereign's credit risk are currently under development.

Table 6: Processes to identify and manage climate-related risks

Risk	Risk factor	Portfolio covered	Identification & assessment	Management
Transition	Reputational	Corporates loan book	Based on normative standard (E&S policies)	Mitigation action
	Credit	Corporates loan book	Based on scenario analysis (Climate Vulnerability Indicator)	Client engagement on climate strategy
		Sovereign loan book	Under development	-
Physical		Corporates loan book		
		Retail loan book		
		Sovereign loan book		
	Operational	Own operations	Part of operational risk framework	Mitigation action

Source: Société Générale *Climate Disclosure Report 2020*

Recommendation R5: **Process for Managing Climate-related Risks**	
Description	Disclose the financial institution's processes for managing climate-related risks including decisions to mitigate, transfer, accept, or control those risks. Disclose improvements planned/completed by the financial institution to enhance capabilities and incorporate climate-related risks into existing risk management framework. Conduct training and employee readiness planning as well as programmes. Disclose how the financial institution's customers are engaged and helped in mitigating climate-related risks. Use metrics and targets to monitor progress in managing climate-related risks (i.e. exposure to, and quantification of, risk types by business segment and jurisdiction). Set out the financial institution's risk management controls or actions in managing impacts from indirect climate-related risks (i.e. through activities of its clients).

	Disclose the financial institution's exposure to, and quantification of, sustainable financing.
Example(s)	**Example 1** UBS provided disclosures on how they engaged and helped clients in mitigating climate-related risks. Protecting our clients' assets As a global financial institution, it's our responsibility to help clients navigate through the challenges of the transition to a low-carbon economy. We help our clients assess, manage and protect their assets from climate-related risks by offering innovative products and services in investment, financing and research. UBS Asset Management (AM) has developed a suite of products, termed Climate Aware, to help investors align their portfolios toward a lower-carbon future. The first Climate Aware passive equity strategy was launched in 2017. In 2020, we launched a broader Climate Aware suite of investment strategies based on the original Climate Aware methodology, including active and passive, equity and fixed income. This expanded offering is delivering on the commitment our firm made at the World Economic Forum (WEF) Annual Meeting 2020 to support clients in their own climate change transition. It enables clients to reduce the carbon footprint of their portfolios in line with their sustainability goals while meeting their financial objectives. In December 2020, UBS became a founding signatory of the Net Zero Asset Managers Initiative alongside 30 other asset managers representing over USD 9 trillion of assets under management (AUM). This leading group of global asset managers has committed to supporting the goal of net zero GHG emissions by 2050 or sooner, in line with global efforts to limit global warming to 1.5°C. As part of the initiative, asset manager signatories have committed to: – working in partnership with asset owner clients on decarbonization goals, consistent with an ambition to reach net zero emissions by 2050 or sooner across all assets under management; – setting an interim target for the proportion of assets to be managed in line with the attainment of net zero emissions by 2050 or sooner; and Engagement On behalf of clients, AM engages with companies it invests in to discuss approaches to mitigating climate-related risk. AM also actively votes on shareholder resolutions to improve transparency and disclosure around climate-related reporting. Specifically in the context of its Climate Aware strategy, AM has implemented an engagement program with 49 oil and gas companies as well as utilities companies underweighted in the strategy. Communication with these companies aims at improving their disclosure and performance alignment with the TCFD recommendations. Engagement also makes it possible to share the results of the quantitative and qualitative assessments included in the fund methodology with investee companies. This allows for the verification of company performance with additional information collected before and after meetings. It also means AM can collect feedback, explicitly communicate objectives for change in corporate practices and further enhance the model used to inform the under- / overweights in the strategy. *A Climate Aware framework for investors* The Climate Aware framework is built on the methodology that underlies AM's Climate Aware strategy. The main characteristics of the framework are: – Portfolio mitigation: lowering investment exposures to carbon risk – Portfolio adaptation: increasing investment exposure to climate-related innovation and solutions – Portfolio transition: aligning portfolios to an investor's chosen climate glidepath *Source: UBS SR 2020 pg. 38-39: Protecting our clients' assets, Engagement & Climate-related opportunities*

Example 2

Barclays disclosed that they provided training and employee readiness planning and programmes (e.g. training for Environmental Risk Team as illustrated below).

Managing risk

On an annual basis, where an overall Credit Climate Lens rating for a client is assessed as Medium or High, the client details are referred to the Environmental Risk Team (ERT). This dedicated team within the Enterprise Risk Management (ERM) function, conducts enhanced due diligence (EDD). Following their analysis, ERT provides recommendations and guidance on how to proceed with these clients, addressing any issues identified during the EDD process.

In addition to EDD, scenario analysis and stress testing were identified as primary tools to support risk management efforts in assessing climate change risks in the portfolio and overall resilience of Barclays' strategy. Please see the Scenario analysis section for more information on stress testing.

Source: Barclays TCFD Report 2020 pg. 18

Example 3

Barclays disclosed the exposure ($/%) and quantification of risk types by business segment and jurisdiction.

	Total 2019 £m	Total 2020 £m	YoY % change
Airlines	1,381	**1,339**	-3%
Airports	546	**661**	21%
Automobile manufacturers	2,971	**3,649**	23%
Building materials	1,141	**1,194**	5%
Coal mining and supporting infrastructure	40	**28**	-28%
Commodity chemicals	1,882	**2,005**	7%
Mining and metals, excluding coal	2,071	**2,065**	0%
Oil & Gas – Extraction	7,308	**7,414**	1%
Oil & Gas – Midstream Energy	3,616	**3,223**	-11%
Oil & Gas – Oilfield Services	2,480	**2,100**	-15%
Oil & Gas – Refining and Marketing	2,774	**2,821**	2%
Power Utilities	10,319	**9,911**	-4%
Protein and Agriculture	5,298	**5,453**	3%
Shipping	715	**683**	-4%
Steel	471	**502**	7%
Surface transportation and logistics	657	**689**	5%
Total	**43,670**	**43,737**	0%

Notes

* Over the last year we have continued to evolve our understanding of climate and carbon-related risk and have reviewed our Barclays Industrial Classifications to ensure they accurately reflect these risks. As a result of these reviews, we have identified additional areas within the broader sector categories, which we deem elevated climate and/or carbon risk, and have restated last year's tables to reflect evolved understanding. This covers the Protein and Agriculture, Shipping and Power Utilities sectors.
* Barclays does not consider all parts of the Power Utilities value chain exposed to elevated climate risk, for instance Power Distribution & Transmission. Climate risk for this sector may depend on a number of factors such as the reliance and/or focus of the company on fossil fuels. As such, exposures for this sector show the portion of the Power Utilities sector where we do identify elevated climate risks. As a result, our 2019 elevated risk number has been restated from £36,670m to £43,670m.

Source: Barclays TCFD Report 2020 pg. 31

Example 4

Société Générale disclosed their risk management controls or actions set out in managing impacts from indirect climate-related risks (i.e. through activities of its clients).

5.2. Indirect materiality

5.2.1 Portfolio alignment

The concept of aligning finance with the Paris Agreement PA has emerged over the past couple of years as the new paradigm for increasing climate action ambition within the financial community. This concept integrates the fact that financial flows need to be "consistent with a pathway towards low greenhouse gas emissions and climate-resilient development" (PA article 2.1.c), to hold "the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C pre-industrial levels" (PA article 2.1.a).
At the 2018 COP24 in Katowice, Societe Generale, together with BBVA, BNP Paribas, ING and Standard Chartered publicly pledged to develop an open source methodology and to align their activities with the goals of the Paris Agreement, i.e. this became known as the Katowice commitment.[31] This commitment was echoed by the Collective Commitment on Climate Action (CCCA) launched on the side of the signing of the United Nations Principles for Responsible Banking. The CCCA was signed by 36 international banks including the 5 'Katowice Banks'.[32]

Since 2018, the Katowice Banks have collaborated with think tank 2° Investing Initiative (2DII) to make the Paris Agreement Capital Transition Assessment or PACTA methodology applicable to bank lending (initially developed for equity and bond portfolios). Close to twenty systemically important banks took part in the PACTA pilot, and the open source tool can be used by any bank that is interested, using a range of input data.[33]

In September 2020, 2DII published its PACTA methodology. A couple of days after the Katowice Banks jointly publish a report on the application of the PACTA methodology on their credit portfolios.[34]

2DII publish the "PACTA methodology" with an online tool.





https://www.transitionmonitor.com/wp-content/uploads/2020/09/PACTA-for-Banks-Methodology-Document.pdf

Katowice Banks publish their "Application of the PACTA methodology".



https://2degrees-investing.org/wp-content/uploads/2020/09/Katowice-Banks-2020-Credit-Portfolio-Alignment.pdf

Source: Société Générale *Climate Disclosure Report 2020, pg. 37 and 38*

Example 5
Société Générale disclosed the quantification of sustainable financing as part of managing the transition to a low carbon future.

7.5. Financing the transition

The Group is monitoring its Sustainable and Positive Impact Finance (SPIF)[47] to extend credit, leasing and customer support in the growth of sustainable activities. The figure below shows the evolution and distribution of climate-related financing over time.

Figure 23: Green financing production (corporate)

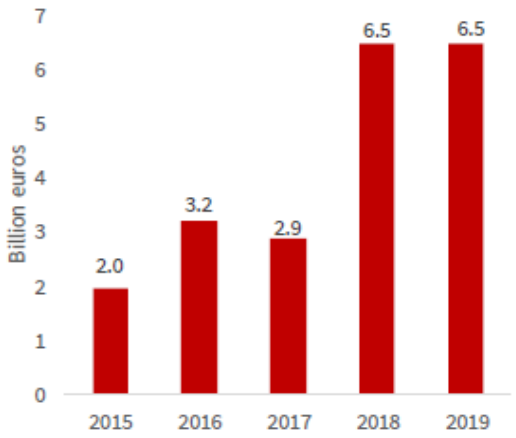
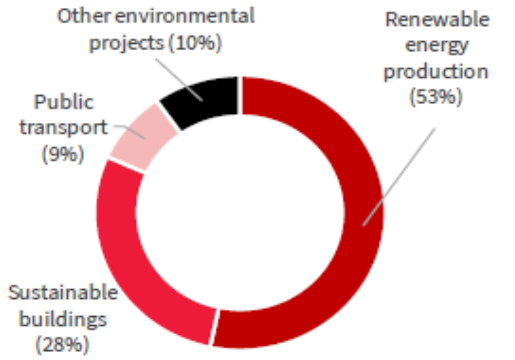


Figure 24: Split of green financing production 2019



Source: Société Générale Climate Disclosure Report 2020, pg. 53

Example 6

Société Générale disclosed its process for identifying and managing climate-related risks, particularly transition risks.

4.3. Processes for identifying and managing climate-related risks

This remaining subsection present four processes in place to identify, assess and manage climate-related risks. As shown on Table 6, these processes examine a range of transition and physical risk impacts on a variety of risk factors and portfolios, and are at various stage of maturity:

Two already operational processes are monitoring transition risk impact on credit and reputational risks. One assesses the long-term impact of transition risk on corporate client credit risk using scenario analysis, while another looks at the short-term impact of transition risk on reputational risks using the Group's normative standards set out in its E&S policies. Those two processes are nonetheless intertwined as they rely on similar input data, scenarios, processes and, in some cases, people within the bank.

Societe Generale also assesses physical risks on its on assets and operations within its operational risk framework.

The assessment of physical risks on the Group's corporate and retail loan books as well as the impact of climate-related risks on sovereign's credit risk are currently under development.

Table 6: Processes to identify and manage climate-related risks

Risk	Risk factor	Portfolio covered	Identification & assessment	Management
Transition	Reputational	Corporates loan book	Based on normative standard (E&S policies)	Mitigation action
	Credit	Corporates loan book	Based on scenario analysis (Climate Vulnerability Indicator)	Client engagement on climate strategy
		Sovereign loan book	Under development	-
Physical		Corporates loan book		
		Retail loan book		
		Sovereign loan book		
	Operational	Own operations	Part of operational risk framework	Mitigation action

Source: Société Générale Climate Disclosure Report 2020, pg. 29

Example 7

Barclays provided a description of impacted risk management processes and controls, including a description of improvements planned/completed to enhance its capabilities and incorporate climate-related risks into existing risk management framework.

A range of indicators were used to assess a sovereign's ability and capacity to respond to climate-related challenges, including five Transition Risk factors, five Physical Risk factors and three Economic & Fiscal Strength factors. A number of external metrics have also been utilised, including the University of Notre Dame's Global Adaptation Index and Climate Change Performance Index – Climate Policy. These factors were then applied to countries with material exposure of more than £200m. Sovereigns that are most impacted to these factors are now being monitored on an ongoing basis.

In support of the climate internal stress test, this analysis resulted in adjustments being made to the sovereign credit rating, as determined by the underlying scenario. From here, stress loss was calculated to inform Barclays' vulnerability.

Sovereign risk assessment

In 2020 a climate sovereign risk assessment was introduced, which included a risk factors matrix incorporating physical, transition and connected risk factors. It was designed to support the internal stress test on Climate Change and is being introduced as part of our ongoing risk review as part of the CCFOR Policy.

Managing risk

On an annual basis, where an overall Credit Climate Lens rating for a client is assessed as Medium or High, the client details are referred to the Environmental Risk Team (ERT). This dedicated team within the Enterprise Risk Management (ERM) function, conducts enhanced due diligence (EDD). Following their analysis, ERT provides recommendations and guidance on how to proceed with these clients, addressing any issues identified during the EDD process.

In addition to EDD, scenario analysis and stress testing were identified as primary tools to support risk management efforts in assessing climate change risks in the portfolio and overall resilience of Barclays' strategy. Please see the Scenario analysis section for more information on stress testing.

Source: Barclays TCFD Report 2020

Recommendation R6: **Process for Integrating (i) Process for Identifying and Assessing Climate-related Risks and (ii) Process for Managing Climate-related Risks; into Overall Risk Management.**	
Description	Disclose how the financial institution has integrated climate-related risks into existing risk categories such as credit, market, operational, insurance and liquidity risks. Disclose how the financial institution has integrated climate-related risks into existing risk framework(s) and/or directly into credit and investment decision-making (e.g. lending policies, underwriting standards, risk ratings, pricing models). Disclose the financial institution's exposure to physical and transition risks within its operations and business model, including concentrations of risk at portfolio and transaction levels, and by geographical footprint. Disclose the financial institution's efforts in supporting clients through mitigating climate-related risks via sustainable finance solutions. Implement policies that restrict/divest from high-risk exposures and in line with international commitments/frameworks. Enhance the financial institution's climate risk management framework to be more predictive.
Example(s)	**Example 1** Société Générale disclosed the identification of physical risks on credit risk using scenario analysis.

4.3.4 Identification of physical risk impact on credit risk using scenario analysis

Our R&D work on physical risk-related impacts on our portfolios started with our French retail mortgage loan portfolio, for which the exact location of financed assets is known. Conversely it is more complex to locate all assets, installations, premises of our corporate borrowers as explained in the next section. Our analysis was conducted as follow:

- Assessement of the amount of residential loans exposed to acute physical events (but not the expected financial loss) i.e. we mapped the portfolio against the physical risk map of most impacted areas.
- Monitoring risks associated with drought, flooding and coastal flooding. Coastal flooding occurs when normally dry, low-lying land is flooded by seawater. Note that it is a different risk to sea level rise. The former is an acute risk (increased severity of extreme weather events) while the latter is a chronic risk (changes in extreme variability in weather patterns). However, sea rising is an aggravating factor of coastal flooding.
- Our analysis was based on data provided by the ONRN (*Observatoire National des Risques Naturels*). It contained the part of the population of each municipality affected by drought, floods and coastal flooding risk.

It was noted that the consequences of extreme weather events for borrowers would first be covered by the state-guaranteed natural disaster regime as long as the borrowers have insurance cover. If this cover is no longer maintained and default arises, the bank would be partially covered by the guarantee from *Crédit Logement*[28]. In this study, no climate physical risk scenario has been used to map the identified vulnerable areas to weather projections.

A web application has also been internally developed to identify the drought, flooding and coastal flooding risks at municipality level. The application computes Societe Generale's exposure in any particular area and enables a visualisation of the different types of risk at selected levels of granularity. The application also provides aggregated data at department level. Figure 7 provides an illustration of this interface.

After conducting this first study on home loans, the CORISQ requested to pursue R&D physical risk work on the Group's corporate loan portfolio.

The main challenge is to obtain the precise location of clients' assets and value chains, making difficult to undertake a systemic study on our entire portfolio. To address this issue, we are developing use cases at corporate or sector levels in order to put in place analyses to be generalised in the future.

4.3.5 Identification of transition & physical risks impact on sovereigns using scenario analysis (loan books)

A proof of concept for a sovereign Climate Vulnerability Indicator has been conducted and is now being built. The goal is to construct an indicator of the relative vulnerability of countries to climate risks to understand the direct effect on country risk, i.e. the ability and willingness of a country to honour their external debt commitments.

The lack of historical data on sovereign default associated with climate change and the only recent integration of ESG considerations into agency ratings prevent the use of traditional rating modelling techniques or application of an econometric model.

This index, which is built in-house, evaluates the vulnerability to physical and transition risk and is adaptable to any scenario. The variables used to calculate the indices are constructed using publicly available data. For each variable, the countries are ranked from least vulnerable (0) to most vulnerable (1) and the indices are constructed as an average of the ranks of the relevant variables.

A physical risk score ranks countries according to their vulnerability. It thus considers both extreme weather events and gradual global warming as these climate-related hazards will likely lead to a deterioration of public and external finances. This score includes for instance data such as shared water resources or share of population living below 5 meters of elevation.

A transition risk score ranks the countries according to their vulnerability that can have a negative effect on public and external solvency via two channels:

- The cost associated with adaption to a lower-carbon economy
- The opportunity cost of stranded assets, which may translate into lower FX revenues for instance, deteriorating the external metric of a country

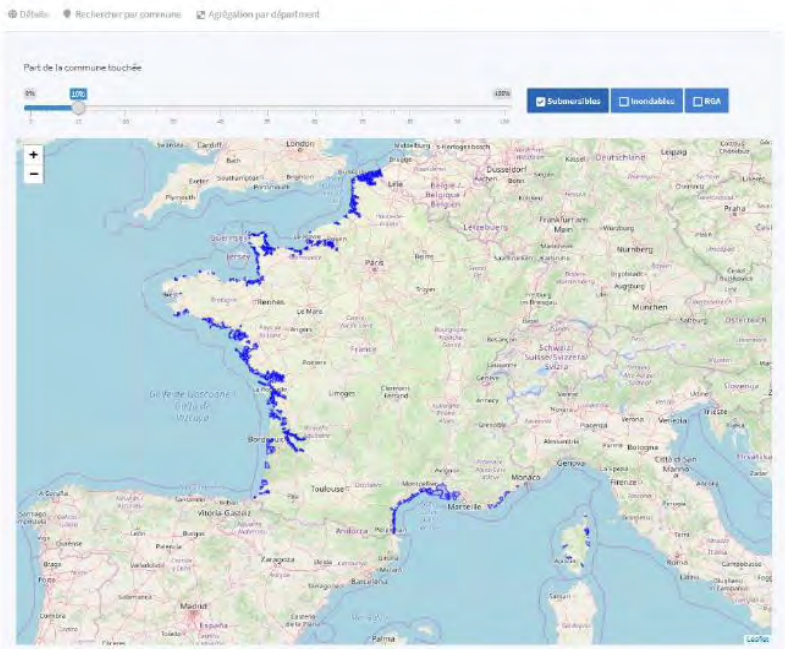
This score includes data on energy imports dependency or CO_2 intensity of the economy.

Source: Société Générale *Climate Disclosure Report 2020, pg. 33 and 34*

Example 2

Société Générale disclosed the identification of physical risks on credit risk using scenario analysis to determine concentration of risks on geographical footprint.

Figure 7: Illustration of coastal flooding mapping in the Societe Generale's internal web application



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This score includes data on energy imports dependency or CO_2 intensity of the economy.

Source: Société Générale *Climate Disclosure Report 2020, pg. 33 and 34*

Example 3

Barclays disclosed its efforts in supporting clients through mitigating climate-related risks via its sustainable finance solutions (integration of climate-related considerations into its financing and investing).



Source: Barclays TCFD Report 2020 pg. 11

Example 4

Société Générale disclosed implementation of policies that restrict/divest from high-risk exposures and in line with international commitments/frameworks.

At the 2018 COP24 in Katowice, Societe Generale, together with BBVA, BNP Paribas, ING and Standard Chartered publicly pledged to develop an open source methodology and to align their activities with the goals of the Paris Agreement, i.e. this became known as the Katowice commitment.[31] This commitment was echoed by the Collective Commitment on Climate Action (CCCA) launched on the side of the signing of the United Nations Principles for Responsible Banking. The CCCA was signed by 36 international banks including the 5 'Katowice Banks'.[32]

Since 2018, the Katowice Banks have collaborated with think tank 2° Investing Initiative (2DII) to make the Paris Agreement Capital Transition Assessment or PACTA methodology applicable to bank lending (initially developed for equity and bond portfolios). Close to twenty systemically important banks took part in the PACTA pilot, and the open source tool can be used by any bank that is interested, using a range of input data.[33]

In September 2020, 2DII published its PACTA methodology. A couple of days after the Katowice Banks jointly publish a report on the application of the PACTA methodology on their credit portfolios.[34]

The publication of this report is a first response to the Katowice commitment of developing an open source methodology. With this document Katowice Banks aim to demonstrate why PACTA is a robust approach to steer banks' portfolios towards financing a lower-carbon society. The report provides an overview of the approach and specificities identified as most useful for banks. Having a standardised approach will ensure results are comparable across banks, for the benefit of their stakeholders. By sharing their insights and learnings the banks hope to help and inspire other banks to use PACTA and contribute further to its development.

Source: Société Générale *Climate Disclosure Report 2020, pg. 38*

Example 5

Société Générale disclosed its commitment to support clients through mitigating climate-related risks via its sustainable finance solutions (integration of climate-related considerations into its financing and investing).

6.2. Sustainable and positive impact financing

We have built our expertise on our deep historical knowledge in environmental & social risk management, structured finance and capital markets to meet the increasing demand of our clients for financial solutions that match their sustainability agenda.

6.2.1 Renewable energy project finance

With a global presence and acknowledged energy sector expertise, Societe Generale is a reference bank in renewable energy (solar, wind and biomass energy, etc.) with a global franchise.

- Societe Generale ranks #1 on the financing of renewable energies in the EMEA region according to Infranews in 2020.
- Societe Generale ranks #2 in renewable energy project financing in the 2019 Dealogic rankings for the EMEA region, having acted as Mandated Lead Arranger (MLA) on 17 transactions representing a total value of USD 1.1 billion. Dealogic based its rankings on an analysis of 91 international banks.
- Societe Generale ranks #3 in the region Europe, Middle-East and Africa (EMEA) in IJ Global's league table of financial advisers for renewable energy project finance, with a total value equivalent to USD 6,000 billion. About 60 of the banks were studied by IJ Global as part of this ranking.
- Societe Generale is also the sole bank with an offshore wind track record across the Americas, Asia and Europe and has led a series of first moves for clients across the globe.

6.3. Sustainable and responsible investing

Societe Generale's Cross Asset Research department is evolving its offer to systematically integrate an analysis of Environmental, Social and Governance (ESG) dimensions into its equity publications, in addition to the fundamental financial analysis. This new offer will be available from January 2020, making Societe Generale one of the first players to develop this holistic approach for equity research.

6.3.1 Socially Responsible and Impact investing (SRI) and ESG Research & advisory

With a top-ranked ESG Research team, performing index solutions and a broad socially responsible product offer - ranging from the most vanilla to the most customized proposal - the aim is to deliver sustainable investment solutions that fit the diverse ESG & SRI strategies of Societe Generale's clients. Societe Generale's equity research systematically includes an ESG analysis as well as the financial analysis.[38]

Socially Responsible and Impact investing (SRI) issues, as well as Environmental, Social & Governance (ESG) factors, have become important performance drivers. Sitting alongside financial and macroeconomic considerations, ESG factors have become easier to quantify and are now considered when assessing any company. Since 2016, Societe Generale's dedicated ESG research team has helped investors and asset managers to integrate these criteria into investment decisions. From 2020 all Societe Generale equity research integrates ESG analysis.

Lyxor also puts SRI at the heart of its investment strategy by creating concrete solutions that take into account environmental, social and governance factors to meet the challenges of the future, including climate transition and growing demand for responsible investment. In 2017, LYXOR launched the world's first Green Bond ETF (this fund is representative of the performance of green bonds issued by Investment Grade entities). More recently, LYXOR is the first provider to launch an ecosystem of ETFs designed to counter climate change. It specifically completed its ETF offer related to the fight against climate change and reinforced its shareholder engagement policy to push climate-friendly policies in the companies invested.

Source: Société Générale *Climate Disclosure Report 2020, pg. 42 and 44*

Example 6

Barclays disclosed pertinent details relating to financing activities for sensitive/high risk sectors.

Specific fossil fuel financing activities

Barclays has historically been a significant financier of the energy and power industries, although we are a considerably smaller player than our American peers in fossil fuel financing. Nonetheless, we are committed to a material rebalancing of our activities.

We will henceforth undertake no financing of drilling in the Arctic. We will provide no financing for fracking in Europe or the UK, and strengthen our due diligence for US fracking.

We will commit ourselves to the steady reduction in any thermal coal financing so that we will only provide finance to entities whose thermal coal activities represent less than 30% of revenue by 2025 and less than 10% of revenue by 2030. A residual revenue of 10% will enable us to continue supporting clients who are committed to the Paris Goals through their transition where a small, legacy element of their overall portfolio is taking longer to

phase out. The emphasis on entities is important as many of our peers set targets at only the group level of their clients, thereby providing greater scope for financing; we look at the actual entity to which we are providing the financing, which is a more restrictive approach. We will not support project finance transactions for the development of greenfield thermal coal mines or to enable the construction or material expansion of coal-fired power stations, anywhere in the world. We will also not provide general corporate financing that is specified as being for new or expanded coal mining or coal-fired power plant development.

Source: Barclays TCFD Report 2020 pg. 3

Example 7

Barclays provided description of how climate-related risks have been integrated into credit and investment decision-making (e.g. lending policies, underwriting standards, risk ratings, pricing models).

Portfolio and Mandate & Scale

In 2020 we have integrated environmental and climate change risks into Mandate & Scale annual credit portfolio reviews for elevated risk sectors.

Mandate & Scale Exposure Controls are a portfolio risk management tool and form part of the overall Risk Appetite control framework to review and control business activities, checking they are within Barclays' mandate (i.e. aligned with expectations), and are of an appropriate scale (relative to the risk and reward of the underlying activities). Limits and triggers are put in place to avoid concentrations that may lead to unexpected losses detrimental to the stability of the relevant business or the Group. They take the broader economic outlook, wider Group strategy, and risk/ return considerations into account and are set for a number of sectors and products. Physical, transition

Source: Barclays TCFD Report 2020 pg. 18

Example 8

Société Générale disclosed how they embed climate-related risks into existing risk framework which facilitates credit and investment decision-making.

4.2.2 Consideration of climate-related risks in the normative framework (E&S policies)

As part of its risk management framework, the Group has adopted procedures to implement its E&S commitments (E&S General Guidelines and policies and the Equator Principles). These procedures aim at managing the E&S issues associated with transactions and clients to which the Bank provides banking and financial services. Initially only applicable to the activities of Corporate and Investment Banking, they are now being developed and gradually rolled out to cover all of the Group's financing and investment activities. In addition to facilitating the identification, assessment and appropriate management of potentially negative E&S impacts, these procedures also enable the identification of transactions and clients having a positive impact in relation to sustainable development.

Developed by cross-business line working groups under the supervision of the Group CSR Department, the E&S policies are approved by the CORESP. They detail the main E&S challenges and risks of the sectors covered, identify international standards for such sectors, and propose an analytical framework applied to the evaluations of clients and dedicated transactions. As part of the Group's commitment to ongoing improvement, sector watch allows to assess the need to update existing policies.

Source: Société Générale *Climate Disclosure Report 2020, pg. 28*

Example 9

Barclays disclosed on how climate-related risks have been integrated into existing risk categories such as credit, market, operational, treasury and capital risks.

Climate-related risk management process	Credit risk	Market risk	Treasury and capital risk	Operational risk
Frequency of assessment	*Annual*	*Quarterly*	*Annual*	*Annual*
Time horizons covered	**S,M,L**	**S,M,L**	**S,M**	**S,M**
Description	The risk of loss to the Group from the failure of clients, customers or counterparties, including sovereigns, to fully honour their obligations to the Group, including the whole and timely payment of principal, interest, collateral and other receivables.	The risk of loss arising from potential adverse changes in the value of the Group's assets and liabilities from fluctuation in market variables including, but not limited to, interest rates, foreign exchange, equity prices, commodity prices, credit spreads, implied volatilities and asset correlations.	Treasury and capital risks are impacted by climate-related risks, primarily in a second order manner, and include liquidity risk, capital risk and interest rate risk in the banking book.	The risk of loss to the Group from inadequate or failed processes or systems, human factors or due to external events (for example, extreme weather events) where the root cause is not due to credit or market risks.
Process	Client-level assessment.	Portfolio-level assessment.	Qualitative assessment of oversight portfolios and review of climate stress testing results to inform risk management.	Qualitative assessment – regular oversight of internal and external risk events relevant to climate change. Key learnings to inform assessment of the bank's resilience capabilities.
Example	A client operating in a carbon-intensive sector which does not have an adaptation plan to transition to a low-carbon economy and becomes subject to high carbon tax payment that negatively affects its cash flow.	Climate change may lead to market risk through a disorderly transition to a low-carbon economy or via physical climate events and shifts in supply and demand for financial instruments, which may then impact market prices for susceptible sectors or countries.	Adverse market movements resulting from transition risks such as legislative change, or from government fiscal responses to sudden physical climate change events, may impact the fair value of the bank's investments such as those in the liquid asset portfolio. Additionally, longer-term climate change risks may adversely impact the bank's future revenue through customer behaviour, balance sheet or strategy changes over the longer term in response to climate change risk factors.	An extreme weather event occurs which impacts locations and sites where the Group operates could also prevent employees from accessing the premises, and/or results in a data centre failing.

Source: Barclays TCFD Report 2020 pg. 16

Example 10

Société Générale disclosed on how climate-related risks have been integrated into existing risk categories such as credit, market, operational, insurance and liquidity risks. SG has also disclosed comprehensively for each existing risk categories, what are the physical and transition risks.

For Societe Generale, climate-related risks do not form a new category of risks but constitute an aggravating factor of existing categories as credit, market, operational, insurance risks and liquidity risks. This is in line with the best practices published in 2020 by the French banking regulator (Autorité de contrôle prudentiel – ACPR)[25] and the European Central Bank *Guide on climate-related and environmental risks*[26].

Those risks categories are defined as below[27] :

- **Credit and counterparty risk**: risk of losses arising from the inability of the Group's customers, issuers or other counterparties to meet their financial commitments. Credit risk includes the counterparty credit risk linked to market transactions and securitisation activities. In addition, credit risk may be further amplified by individual, country and sector concentration risk.
- **Market risk**: risk of a loss of value on financial instruments arising from changes in market parameters, the volatility of these parameters and correlations between them. These parameters include but are not limited to exchange rates, interest rates, the price of securities (equity, bonds), commodities, derivatives and other assets.

- **Operational risk**: risk of losses resulting from operational failures, inadequacies or failures in processes, personnel or information systems, or from external events. It includes:
  - **non-compliance risk** (including legal and tax risks): risk of court-ordered, administrative or disciplinary sanctions, or of material financial loss, due to failure to comply with the provisions governing the Group's activities,
  - **reputational risk:** risk arising from a negative perception on the part of customers, counterparties, shareholders, investors or regulators that could negatively impact the Group's ability to maintain or engage in business relationships and to sustain access to sources of financing,
  - **misconduct risk:** risk resulting from actions (or inactions) or behaviour of the Bank or its employees inconsistent with the Group's Code of Conduct, which may lead to adverse consequences for our stakeholders, or place the Bank's sustainability or reputation at risk,
  - **IT and Information Systems Security risk** (cybercrime, IT systems failures, etc.);
- **Risk related to insurance activities**: through its insurance subsidiaries, the Group is also exposed to a variety of risks linked to this business. In addition to balance sheet management risks (interest rate, valuation, counterparty and exchange rate risk), these risks include premium pricing risk, mortality risk and the risk of an increase in claims.
- **Liquidity and funding risks:** liquidity risk is defined as the inability of the Group to meet its financial obligations: debt repayments, collateral supply, etc. Funding risk is defined as the risk that the Group will not be able to finance its business growth on a scale consistent with its commercial objectives and at a cost that is competitive compared to its competitors;

Table 5: Identified climate-related risks impact on existing categories of risk

Risk	Physical	Transition
Credit	Physical risk could increase customer' probability of default by directly damaging their assets in affected areas (as physical events could hit production facilities, warehouses, services and decisions centres) and indirectly impacting their business model by disturbing their supply chain, commercial routes or markets. In case of the customer default, physical risks could also make the Group ability to recover part of their commitment more difficult, for example through lower collateral valuations in real estate portfolios as a result of increased flood risk.	Transition risks, for sectors affected by low-carbon transition policies (higher price of carbon for example), could also impact customers' ability to generate revenues and meet their financial commitments if they do not take measure to adapt their business models or if they cannot finance the needed adaptations measures (as research and developments to develop low-carbon alternatives to products and services). Transition risks could also indirectly impact customers' assets valuation, for example by impacting the valuation of fossil fuels reserves such as coal or oil, whose value is expected to fall in a low-carbon economy perspective (stranded assets phenomenon). This could particularly impact collateral valuation.

Market	Severe physical events may lead to shifts in market expectations and could result in sudden repricing. For example, hurricanes impacting companies' premises in certain areas may impact market expectations on their ability to generate revenues, and so their share value.	Transition risks may generate an abrupt repricing of securities and derivatives, for example for products associated with industries affected by asset stranding.
Operational	Physical events could impact Societe Generale's own sites and the Group ability to keep on providing services to its customers.	Non-compliance with transition-related disclosure obligations could lead to legal proceedings and fines. Non-compliance with public commitments towards low-carbon economy transition could also generate a reputational risk who might stigmatize banks and generate a loss of revenues caused by customer shift. An additional reputational risk could also exist if a commitment would be perceived by external stakeholders as inappropriate or insufficient.
Insurance	Multiplication of physical events and of higher severity could impact IARD activity (*Incendies, Accidents et Risques Divers*) of which it is the object.	
	Physical and transition risks could impact the value of the assets in which insurance activities invest the money collected. As a result, a drop of those assets values because of transition risks could impact the ability of insurance activities to deal with its financial commitments.	

Source: Société Générale *Climate Disclosure Report 2020, pg. 26-27*

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