

Task Force on Climate-related Financial Disclosures (TCFD) Recommendations

Global Progress Report for the Banking Sector

March 2021



Foreword

It is a cliché to say that humanity is living through uncertain times – yet the unprecedented events of 2020, which have caused significant hardship and economic turmoil, convince us that change and uncertainty will be the bywords of 2021. Perhaps catalysed by this, there is more certainty than ever across the global community that we must act urgently to tackle the climate crisis and the loss of biodiversity. Whereas previous economic recessions have tended to put a hold on action to solve our collective environmental issues, the natural world and our relationship to it remain at the front of the queue as we begin to emerge from the latest one. The need to “build back better” – or as I prefer to say, build forwards better – is a common thread in international rhetoric.

There have recently been clear signals and commitments made by many governments that demonstrate the global intention to effect the transition that is needed:

- President Xi Jinping has pledged that China will reach peak emissions ahead of its 2030 target and achieve carbon neutrality by 2060.
- The European Union has agreed to legally binding targets to achieve a 55% reduction in emissions by 2030 and carbon neutrality by 2050.
- President Joe Biden has re-instated the United States as a member of the Paris Climate Agreement.

In the United Kingdom, Prime Minister Boris Johnson has launched the government’s Ten Point Plan on climate, aiming to mobilise £12 billion of government investment in the UK to create up to 250,000 jobs. This is a big year of climate leadership for the UK as Glasgow hosts the United Nations Conference of Parties on Climate Change, known as COP26, in November. We can expect more action to tackle climate change from the UK government in the run-up to this landmark event, including measures that will impact the banking industry.

As plans are scaled up to support the transition to a low-carbon economy, the Task Force on Climate-related Financial Disclosures (TCFD) recommendations have quickly become the global standard for reporting climate-related risk information to investors, shareholders, and other stakeholders. The framework aims to support the correct pricing of climate risks and opportunities and to avoid sudden value shifts as the world adapts to a new economic and regulatory landscape. As of today, over 1,500 organisations across more than 70 countries endorse the TCFD, including nearly 60% of the world’s 100 largest companies¹. The UK has paved the way for mandatory TCFD climate disclosures across the economy by 2025².

Whilst it is widely acknowledged that banking sector participation is critical to support the transition to a low-carbon economy, information on the TCFD adoption progress is still limited. In this context, the release of this BCS Consulting report is timely, providing a comprehensive assessment of where the sector stands. The report highlights solid progress towards embedding the framework globally and illustrates specific examples of emerging industry best practice. Drawing on their expertise in sustainable finance, the authors remind us of the work that is still to be done to create a financial system that is resilient to the risks of climate change, recognises its opportunities, and facilitates a transition to a low-carbon economy.

I encourage banks to review the findings and recommendations in this report and continue to make progress on this journey, working collaboratively, passionately, and decisively to navigate through our uncertain times and help build a better future for us all.



Sir Roger Gifford

Chair, Green Finance Institute

¹ Task Force on Climate-related Financial Disclosures: Status Report (TCFD, 2020).

² The UK joint regulator and government TCFD Taskforce published its Interim Report (HM Treasury, 2020) and Roadmap towards mandatory climate-related disclosures (HM Treasury, 2020).

Introduction

Authors' Note

The voluntary recommendations set out by the Task Force on Climate-related Financial Disclosures (TCFD) were designed to assist organisations in identifying and disclosing the potential impacts of climate-related risks and opportunities.

Over the past year, the TCFD has continued to gain traction worldwide and has cemented its reputation as a leading framework to disclose climate-related information. Endorsement across all industries now represents a combined market capitalisation of ~USD 13 trillion, including financial institutions responsible for assets of USD 150 trillion³. In addition to the progress in endorsement from the private sector, there has been increased regulatory engagement with the framework. For example, regulators in the UK⁴, Hong Kong⁵, and the EU⁶ have announced expectations for climate-related financial disclosures in line with TCFD recommendations.

Although the recommendations are targeted at all sectors, banking disclosures are particularly important as the sector is critical in influencing the allocation of capital in the economy. As expected, climate-oriented regulatory focus in the banking sector has gained important momentum over the past year. For instance, in the UK, the Prudential Regulation Authority (PRA) confirmed that all firms under its regulatory scope should have fully implemented approaches for climate risk management by the end of 2021, with governance, risk management, scenario analysis, and disclosure as key areas of focus⁷.

To effectively meet climate-related expectations, banks need to undertake changes in their operating models across key areas of their organisations. We believe it is vital that organisations tackle climate risk holistically through well-structured initiatives, avoiding a siloed, regulatory-focused approach. The TCFD framework remains an important tool to help organisations focus on capability development in key areas under regulatory scrutiny, including governance, strategy, risk management, and metrics.

This report is based on a detailed assessment of individual banks' disclosures by our Sustainable Finance team. Our ambition in undertaking this research is to create further transparency across the industry and objectively establish the progress that is being made towards a low-carbon economy. Furthermore, we want to highlight the key areas where more work is still to be done and provide our view on how to approach this.

We hope you find this report to be a valuable resource in your own organisation's TCFD journey.

Signed,



The Authors (Hector Fontaine, Matthew Abbam, Hannah Peter, Lucrezia Raggio)

³ TCFD: 2020 Status Report (TCFD, 2020).

⁴ The UK joint regulator and government TCFD Taskforce published its Interim Report (HM Treasury, 2020) and Roadmap towards mandatory climate-related disclosures (HM Treasury, 2020), setting the timelines for mandatory disclosures by 2025; Banks and all premium-listed issuers will be required to 'comply or explain' in line with TCFD recommendations for reporting years starting for accounting periods beginning January 1st 2021.

⁵ In June 2020, the Hong Kong Monetary Authority (HKMA) released a White Paper on Green and Sustainable Banking (Hong Kong Monetary Authority, 2020) outlining steps that organisations need to take to build climate resilience. As part of their recommendations, the HKMA identified the TCFD as the key framework for organisations to make disclosures.

⁶ In November 2020, the European Central Bank released the Guide on Climate-Related and Environmental Risks for Banks (European Central Bank, 2020), including expectations for banks to disclose in line with the TCFD recommendations. The European Commission has also mapped TCFD recommendations to Non-Financial Reporting Requirements in their Guidelines on Reporting Climate-related Information (European Commission, 2020).

⁷ PRA Dear CEO letter 'Managing climate-related financial risk' - thematic feedback from the PRA's review of firms' SS3/19 plans and clarifications of expectations (Bank of England, 2020).

BCS Sustainable Finance Team

Experts in sustainable finance, BCS Consulting works exclusively with financial services providers helping them to understand and address the increased regulation and disclosure requirements necessary in the face of growing climate and sustainability risks. Our experience helping clients stand up to stakeholder scrutiny and meet regulatory demands enables us to deliver more resilient, stronger business in the process.



Hector Fontaine
Sustainable Finance Lead

Hector is the Sustainable Finance Lead for BCS Consulting. He has deep expertise and significant experience in managing risk and sustainability, gained by supporting a large number of financial institutions. He frequently speaks at industry events and has authored numerous ESG publications and articles, including the BCS Consulting ESG Banking Benchmark Report, this report, and the 2019 version of this report. Hector also holds an APRM qualification from the Professional Risk Managers' International Association.



Matthew Abbam
Sustainable Finance SME

Matthew has extensive experience in managing the challenges of sustainability in the financial services sector, leading programmes and researching industry best practice. Matthew holds a Green Finance Certificate from the Chartered Banker Institute and sits on the EDM Council ESG Data Working Group. Recently, Matthew co-authored the BCS Consulting ESG Banking Benchmark Report, this report, and the 2019 version of this report.



Hannah Peter
Sustainable Finance SME

Hannah Peter is a Sustainable Finance Consultant at BCS Consulting. As both an industry professional and management consultant she has developed deep risk management and ESG experience within financial services. She has a Green Finance Certificate from the Chartered Banker Institute, co-authored this report, and was a core contributor to the 2019 version of this report.



Lucrezia Raggio
Sustainable Finance SME

Lucrezia is a Sustainable Finance Consultant with experience supporting organisations with their TCFD reporting and wider ESG requirements. She has a background in financial and non-financial risk management, and holds a Certificate in Climate Change Financial Risk Management from Imperial College, London. She co-authored the BCS PRA Dear CEO Letter paper (Managing Climate-related Financial Risks), this report, as well as contributing to the 2019 version of this report.



Katie Ryan
Sustainable Finance SME

Katie is an experienced ESG consultant specialising in the wealth and asset management sector. As well as supporting firms in mobilising ESG operating models, Katie supports firms to develop appropriate regulatory disclosure, including SFDR, TCFD, Shareholder Rights Directive II and The Stewardship Code. Katie co-authored The Accelerating ESG Regulatory Landscape paper in 2020.



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Henna is Sustainable Finance Consultant with experience of supporting the banking sector in developing Climate Risk Methodologies assessing Physical and Transition Risks and embedding Climate Risk within existing Risk Management Frameworks. Henna is a co-author of the BCS TCFD Global Progress in the Banking Sector Report 2019 and is studying towards her Green Finance Institute Certificate and CFA Certificate in ESG Investing.



Joe Lovatt
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Joe is a Sustainable Finance Consultant with a strong background in ESG and risk management. Joe has advised many financial institutions in ESG topics, particularly in ESG Governance and IT enhancements for ESG management. Joe has also supported the development of BCS research in areas such as TCFD reporting and PRA compliance.



Erkin Nosinov
Risk & Finance Director

Erkin is a Senior Director in our Risk & Finance Service line, responsible for our Sustainable Finance services. He has extensive experience in financial risk, finance, stress testing and regulatory change in the financial services industry across a broad range of products and problems. He has been actively involved in ESG research and development as well as supporting clients in this area since the team's inception three years ago.



Robin Murray
Risk & Finance Practice Lead

Rob leads the Risk & Finance practice for BCS and co-leads the consulting division of the firm. He has considerable expertise in developing and leading risk transformation programmes and is currently working with clients to effectively incorporate ESG considerations in their risk frameworks. Rob is the owner of our Sustainable Finance capability within BCS Consulting.



Executive Summary

Three types of analysis have been conducted to identify the level of progress banks have made in the adoption of the TCFD framework:

1. **Industry coverage:** What proportion of the banking sector is endorsing and disclosing in line with the TCFD framework?
2. **Maturity assessment:** How mature are the disclosures based on the recommendations of the framework?
3. **Best practice:** What do advanced disclosures in the sector currently look like?

Results summary

INDUSTRY COVERAGE

111

banks have endorsed the TCFD recommendations, accounting for...

46%

of global banking assets
^6 percentage points

76

banks have started disclosing on the TCFD framework, accounting for...

38%

of global banking assets
^14 percentage points

Leading region: Europe

43

banks endorsing TCFD

91%

of regional banking assets

Region with largest growth potential: Asia

38

banks endorsing TCFD

37%

of regional banking assets

MATURITY ASSESSMENT

MOST MATURE RECOMMENDATION

Metrics and targets for greenhouse gas (GHG) emissions and related risks (environmental operational metrics)

83%

of banks disclosing at the advanced or intermediate stages

LEAST MATURE RECOMMENDATION

Resilience of the organisation's strategy, taking into consideration different climate-related scenarios

46%

of banks disclosing at the advanced or intermediate stages

AVERAGE MATURITY INCREASE

^24 percentage points
in advanced and intermediate stage disclosures

Summary of key findings

1. Industry Coverage

- As of June 5th, 2020, there are 111 banks that have endorsed the TCFD framework, which accounts for ~46% of global banking assets (USD 68 trillion⁸).
- The number of banks disclosing under the TCFD framework nearly doubled between 2019 and 2020. There are currently 76 banks disclosing, accounting for ~38% of global banking assets (USD 56 trillion⁹).
- The leading region in TCFD adoption is Europe, which contributes the largest number of banks as well as evidencing the highest market penetration in endorsement and disclosure.
- Asia is the highest potential growth region for the TCFD framework with only 37% of the market endorsing whilst also being the largest banking market by asset size.
- There is still significant potential for the framework to grow by securing support from additional large banks. Currently, 38 of the world's top 100 banks have not yet endorsed TCFD. If this group supported the framework, global market share would jump from the current 46% to ~67%¹⁰.

2. Maturity Analysis

Assessment of the banks' progress in meeting the TCFD recommendations:

- 'Metrics and targets for greenhouse gas (GHG) emissions and related risks' (environmental operational metrics) is the most mature recommendation¹¹ with 83% of disclosing banks in the advanced or intermediate stages.
- 'Board oversight' and 'management's role in assessing climate considerations' are additional examples of mature disclosures, with 76% and 74%, respectively, of disclosing banks in the advanced or intermediate stages.
- 'Resilience of the organisation's strategy, taking into consideration different climate-related scenarios' is the least mature recommendation with only 46% of disclosing banks in the advanced or intermediate stages.

Key theme highlights:

- Disclosing banks are evidencing strong progress in 'Green Products', 'Policy and Commitments', and 'Risk Management' integration.
- 'Environmental Financing Metrics' continues to be an area of limited maturity, with only 57% of disclosing banks in the advanced or intermediate stages, with risk metrics being the key gap.
- 'Strategic Planning' evidences limited integration of financial impact, with only 52% of disclosing banks in the advanced or intermediate stages.
- 'Training' continues to be the lowest scoring theme, with the large majority of banks in the beginner or not started stages.

⁸ Market share based on total global banking assets estimate of \$148 trillion (DBRS, 2019). Total banking assets for banks endorsing TCFD sourced from FactSet (FactSet, 2020), annual accounts, and additional sources (see annex d.)

⁹ Market share based on total global banking assets estimate of \$148 trillion (DBRS, 2019). Total banking assets for banks endorsing TCFD sourced from FactSet (FactSet, 2020), annual accounts, and additional sources (see annex d.)

¹⁰ See annex e. for the list of banks in Top 100 not currently endorsing TCFD.

¹¹ In other words, of all the TCFD recommendations, 'Metrics and Targets for GHG' is the recommendation with the largest number of banks in the intermediate and advanced stages of disclosure. This recommendation was also the most advanced in the BCS Consulting Q4 2019 report.

3. Best Practice

Through our Sustainable Finance team's assessment of over 260 sources, this report provides a review of emerging best practices. See section 'Best Practice' for examples of disclosures within the sector.

Closing Remarks

TCFD is becoming a standard reporting framework for a large number of banks across the globe, with best practice guidance quickly developing across the four pillars of the framework. The results evidence important progress in the sector across several recommendations and increased adoption. The next step is to enhance capabilities and disclosures in the most complex areas: scenario analysis, development of risk metrics, and the embedding of climate-related financial impacts in strategic planning. Despite increased information on climate management, there is also a need for greater commitment to fully support the transition to a low-carbon economy, translating Paris Agreement targets and other climate objectives into tangible portfolio alignment plans.

The results demonstrate a real need for broad and deep collaboration across the industry and with external parties. Additionally, more prescriptive industry and regulatory guidance is required to assist organisations to achieve more standardisation for comparability. Despite the challenges, we have seen the sector make significant progress over the last year and believe it is well positioned for the next phase of the TCFD journey.



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1. Report Structure

The BCS Consulting Sustainable Finance team has analysed disclosures of the 111 banks listed in the [TCFD supporters directory](#) as of June 5th, 2020¹². The analysis is underpinned by the TCFD endorsement list data, public banking market data, and data collated from banks' public disclosures (Annual Reports, Corporate Social Responsibility Reports, Environmental, Social, and Corporate Governance Reports, standalone TCFD Reports, etc.).

This report aims to identify the level of progress banks have made in the adoption of the TCFD framework since the previous [BCS Consulting Global Progress Report for Banking Sector](#), released in Q4 2019. Three types of analysis have been conducted for this purpose:

- 1) Industry coverage: What proportion of the banking market is endorsing and disclosing in line with the TCFD framework? How has this evolved over time? Which regions are leading?
- 2) Maturity assessment: How mature are the disclosures based on the recommendations of the framework? Which areas are most and least advanced? What are the key challenges?
- 3) Best practice: What do advanced disclosures in the sector currently look like?

Where we refer to disclosures for 2019, this covers disclosures made in FY2018/19. Where we refer to disclosures for 2020, this covers disclosures made in FY2019/20.

1. Industry Coverage

Banks have been assessed to confirm whether they have started disclosing against the TCFD framework or have only acknowledged support. The analysis highlights which regions lead in commitments to disclose on TCFD.

Banks that have endorsed or acknowledged support of the TCFD framework are defined as the banks that are signatories of the TCFD, based on the data available in the [TCFD supporters directory](#). Banks that have started disclosing in line with the TCFD framework are defined as banks that already include disclosures in line with the TCFD framework as part of public reports (e.g. Annual Reports, ESG Reports, Corporate Social Responsibility Reports, etc.).

2. Maturity Assessment

This analysis aims to evaluate progress in the quality of disclosures in line with the TCFD framework guidance. To achieve this, all TCFD disclosures of banks have been segmented and categorised into 12 themes, and each theme has then been mapped to a TCFD recommendation. BCS Consulting has developed a maturity assessment methodology to rank the level of progress as either not started, beginner, intermediate, or advanced.

3. Best Practice

This analysis provides examples of emerging best practice in TCFD reporting. The research highlights activities evidenced in advanced disclosures and visual illustrations of the TCFD disclosures produced by banks (visual illustrations can be found in annex c.).

4. Recommendations

The report concludes with a set of BCS Consulting recommendations to support further adoption and enhancement of disclosures in the banking sector.

¹² Assessment of market coverage and maturity analysis conducted for banks endorsing as of June 5th, 2020 based on disclosures made as of December 30th, 2020. Assessment of industry best practice examples conducted for banks reporting as of December 30th, 2020.

2. Results

a. Industry Coverage

The focus of this section is to assess the current state of TCFD coverage in banks globally, reviewing:

- Bank size and global market share covered by banks endorsing TCFD; and
- Progress in TCFD reporting adoption across regions and market penetration.

Figure 1: Global market share, number of banks, and size



Figure 1 findings: The banks endorsing TCFD currently account for 46% of global banking assets and more than two-thirds of the banks have already started reporting (76 banks of 111). The size of the banks endorsing TCFD is typically large or medium (over USD 50 billion in assets).

Currently, 111 banks endorse the TCFD framework, accounting for ~46% of global banking assets (USD 68 trillion¹³). Year-on-year, this equates to a 6-percentage point increase in market share and an additional 35 bank endorsements since the [2019 BCS Consulting TCFD report](#) (76 banks endorsed the framework in 2019).

The results evidence an important increase in the total number of TCFD-supporting banks, which highlights the continued global growth of TCFD within the sector. However, the size of these new joining banks tends to be smaller than those that endorsed in earlier years, resulting in only a moderate increase in global market coverage

from 40% to 46%. The proportion of banks over USD 500 billion dropped from 51% of the total in 2019 to 38% in 2020, driven by a significant increase in medium-sized bank endorsement over the past year (see figure 2).

Of the 111 endorsing banks, 76 have commenced disclosing under the TCFD framework, accounting for ~38% of global banking assets (USD 56 trillion). The surge in the number of banks disclosing is further evidence of the important momentum and progress in TCFD disclosure adoption in the industry, with 37 banks commencing reporting over the period.

Figure 2: Endorsement trends by bank size

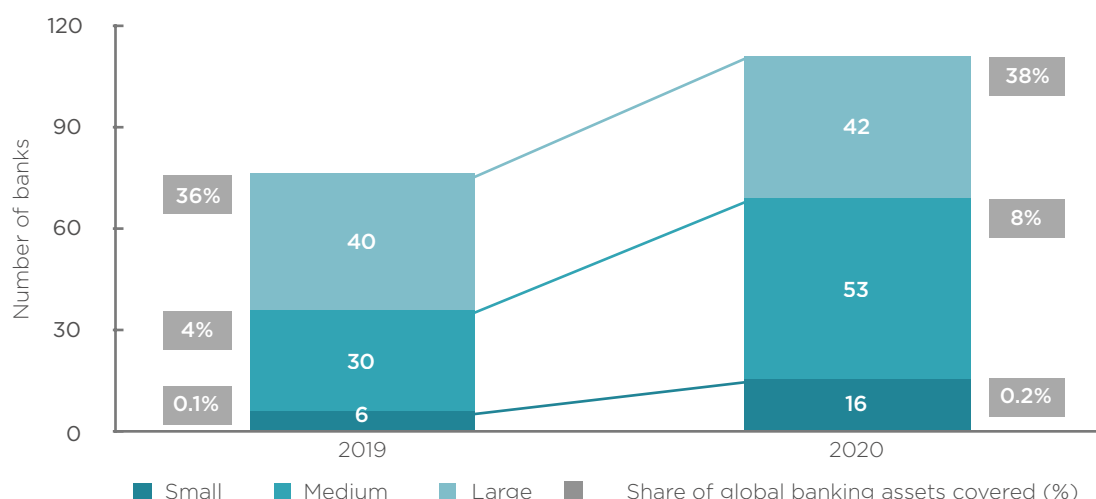


Figure 2 findings: Growth in the number of supporting banks and market share gained in the period is largely driven by TCFD endorsement of medium-sized banks.

Of the 35 additional banks that have endorsed the framework since 2019, 23 are medium-sized (between USD 50 billion and USD 500 billion in assets), 10 are small (<USD 50 billion), and only two are large (>USD 500 billion). Medium-sized banks are driving the market coverage growth of the TCFD in the sector, which demonstrates that the climate agenda is becoming a priority beyond the larger banks. This is potentially driven by the increased regulatory, investor, and customer focus on climate action, resulting in increased pressure for banks from compliance, financial, and reputational perspectives.

¹³ Market share based on total global banking assets estimate of \$148 trillion (DBRS, 2019). Total banking assets for banks endorsing TCFD sourced from FactSet (FactSet, 2020), annual accounts, and additional sources (see annex d.)

Regional coverage

Figure 3: Endorsement and market penetration of TCFD in the banking sector

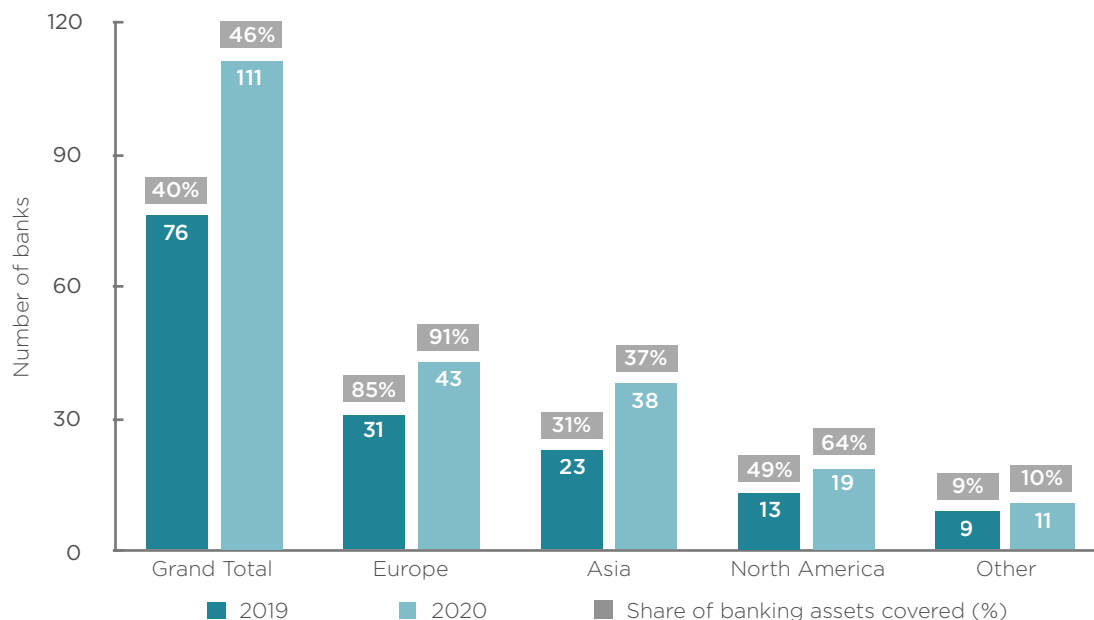


Figure 3 findings: Europe continues to be the leading region in TCFD endorsement. North America has the highest market coverage increase and Asia has the largest increase in the number of new supporters.

Looking at the regional breakdown of TCFD acknowledgement, Europe is the region with the highest total number of banks endorsing (43), followed by Asia (38) and North America (19). The region with the largest increase in number of banks endorsing since 2019 is Asia (an increase of 15 banks).

From a market coverage perspective, Europe has the leading regional market coverage of TCFD endorsement (91% of European banking assets covered), followed by North America (64%), and

Asia (37%). There has been market coverage growth across all regions, particularly in North America where coverage increased by about a third, driven by further endorsement of large American banks.

There is limited market coverage in smaller banking regions (10%), with only 11 banks endorsing in Oceania, Africa, and South America. However, these regions account for less than a quarter of global assets¹⁴.

¹⁴ See annex d. for regional size estimates and sources.

Figure 4: Disclosure and market penetration of TCFD in the banking sector

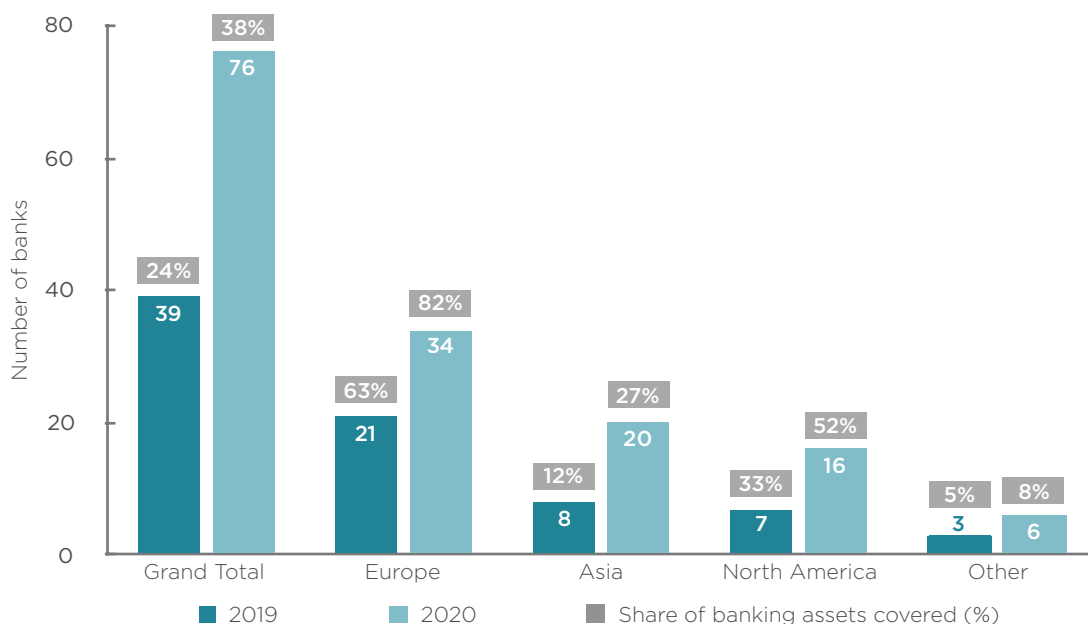


Figure 4 findings: 2020 results evidence a significant increase in both the number of banks disclosing and market coverage across all key markets compared to 2019. Europe has the largest increase in the number of banks disclosing and North America has the highest market share increase.

In terms of disclosures since 2019, Europe has 13 additional banks disclosing, Asia has 12, and North America has 9. From a market coverage perspective, the increase is also highly significant, with market share going up from 63% to 82% in Europe, from 12% to 27% in Asia, and from 33% to 52% in North America.

Figure 5: Endorsement trends year-on-year¹⁵

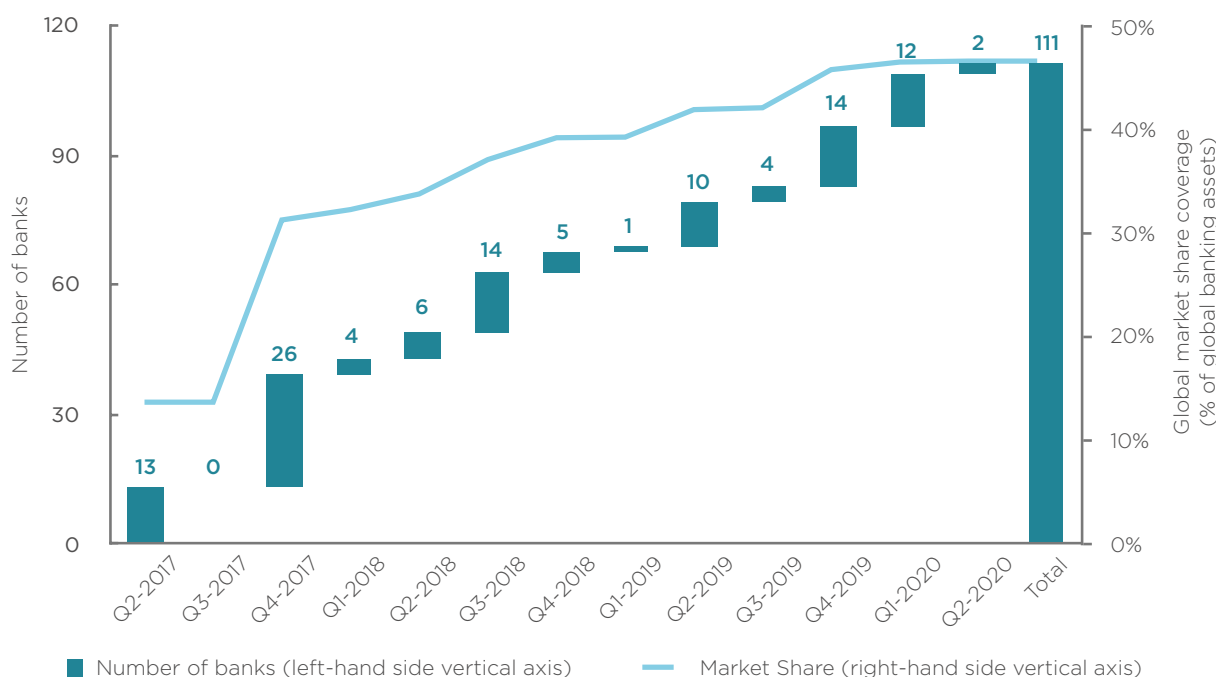


Figure 5 findings: Global endorsement of TCFD continues to grow, but at a slower pace than in earlier years.

While the trend in acknowledgement of the TCFD recommendations has, in general, kept climbing, global market penetration continues to show signs of stagnation. By Q4 2017, the assets held by banks endorsing TCFD accounted for 30% of global market share¹⁶. Since then, that figure has grown by 16 percentage points. The strongest year for TCFD endorsement was 2017 (almost 40 banks) with a slight slowdown in 2018 and 2019 (29 banks in both years).

By Q2 2020, 14 banks added their endorsement to the TCFD recommendations. The results evidence the challenges and potential limitations in market coverage for a voluntary framework: whilst there is wide engagement across the sector, there are many large banks that have not yet endorsed the framework. The trends suggest that without a regulatory mandate, it is unlikely that there will be material growth in endorsement beyond what has already been achieved over the past few years.

¹⁵ At the cut-off date for the 2019 BCS TCFD report in June, 76 banks had endorsed the framework. Three additional banks have since been added to the Financial Stability Board TCFD register for Q2 2019.

¹⁶ Market share based on total global banking assets estimate of \$148 trillion (DBRS, 2019). Total banking assets for banks endorsing TCFD sourced from FactSet (FactSet, 2020), annual accounts, and additional sources (see annex d.)

Figure 6: Can endorsement continue to grow without a regulatory mandate? Market share increase if all top 100 banks supported TCFD

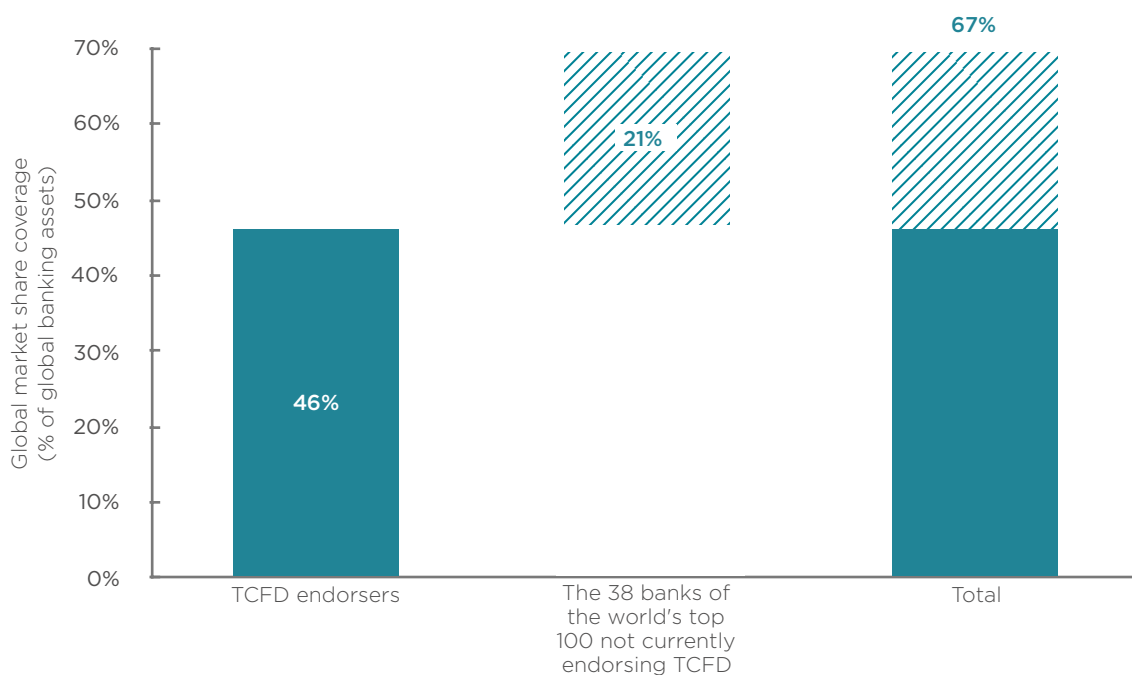


Figure 6 findings: 38 of the world's top 100 banks have not yet endorsed TCFD. Global market share could reach 67% if all top 100 banks endorse TCFD.

Currently, 38 of the world's top 100 banks have not endorsed TCFD. If this group were to support the framework, global market share would jump to ~67%¹⁷. As evidenced above, focusing on buy-in from larger banks holds significant potential for increasing the market penetration of TCFD endorsement.

The largest market share contribution of these 38 banks would come from Asia (16%), followed by Europe (3%) and North America (1%).

There is also further growth potential for the framework more broadly across Asia and North America, which still have a significant market share not currently endorsing TCFD (see figure 3).

China is a crucial country of focus for engagement efforts as 18 of the world's top 100 not currently endorsing TCFD are domiciled there.

¹⁷ See annex d. for the list of banks in top 100 not currently endorsing TCFD.

2. Results

b. Maturity Assessment

Section overview

The purpose of this section is to analyse the maturity of banking TCFD disclosures. The analysis compares the results of last year's TCFD report against the current year to examine disclosure trends among the 76 banks that are currently disclosing under the TCFD framework.

Global results by TCFD recommendation

Figure 7: Share of advanced or intermediate disclosures by TCFD recommendation

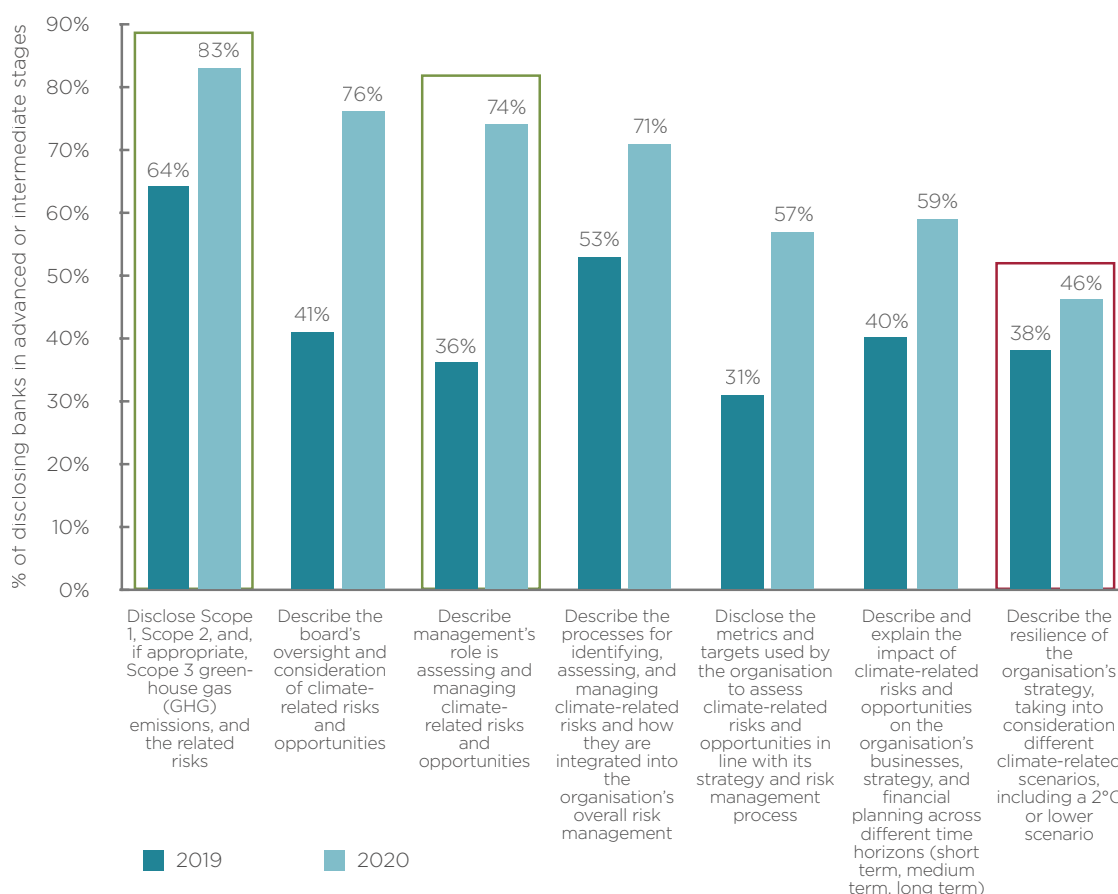


Figure 7 findings:

- 'Metrics and targets for GHG emissions and related risks' continues to be the most mature area with 83% of reporting banks in the advanced or intermediate maturity stages (highlighted in green).
- 'Description of the resilience of the organisation's strategy, taking into consideration different climate-related scenarios' is now the least mature area across the industry with less than half of banks in the advanced or intermediate stages (highlighted in red).
- 'Management's role in assessing and managing climate-related risks and opportunities' has had the biggest increase in maturity since last year (highlighted in green).

There has been a marked increase in the maturity of disclosures by banks over the last year. We have seen an average 24 percentage point increase in advanced and intermediate stage disclosures.

As in 2019, information concerning greenhouse gas emissions (GHG) and operational footprint management is the most mature recommendation, with 83% of disclosing firms in the advanced and intermediate stages. A large number of disclosing banks are reporting their CO₂ operational emissions following the greenhouse gas protocol and disclosing their operational targets. There is also evidence of progress tracking against targets and assessments of internal drivers of the operational footprint.

Encouragingly, the maturity of reporting on 'board oversight' and 'management's role' has substantially increased, with 76% and 74%, respectively, of disclosing firms in the advanced and intermediate stages. Compared to 2019, there has been a sharp increase in the number of banks disclosing details of key executive- and board-level climate responsibilities, associated governance structures, and actions of key committees to evidence climate management.

'Describing the processes for managing climate-related risks' is also one of the most mature recommendations, with 71% of disclosing banks in the advanced and intermediate stages, compared to 53% last year. There is important progress in describing the climate risk framework of banks, including the key activities that support climate risk management, tools to identify climate risks as part of loan approval and investing processes, and evidence of enhanced lending standards integrating climate risk. There is also significant progress in the definition of policies in relation to environmental financing impact.

Looking at the less-mature recommendations, 'disclosure of the metrics and targets used by the organisations to assess climate risk' has seen a large increase in maturity since 2019 disclosures (+26 percentage points), resulting in 57% of disclosing firms evidencing advanced or intermediate stage disclosures. There has been progress in the development and disclosure of metrics relating to the opportunities presented by climate change. This year many more firms detailed green financials in relation to underwriting, direct lending, asset management, and associated targets.

However, 'metrics and targets in relation to risk management' continue to be an important gap in bank disclosures, with only 20% of the disclosing firms reporting the proportion of carbon-related assets at a total portfolio level (advanced). Beyond these disclosures, an even smaller group of banks evidence more granular carbon-related analysis, measurement of weighted carbon intensity, and development of other climate risk metrics.

'Describing the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario' has seen the lowest increase in maturity (+8 percentage points) with still less than 50% of firms in the advanced or intermediate stage. Although there has been much collaboration on the development of scenario analysis, there is still little by way of disclosure of quantitative stress test results for a large portion of the disclosing banks. As a result, there are significant maturity differences emerging between a small group of more advanced banks and the rest.

The description of the 'impacts of climate-related risks and opportunities has also achieved important progress in maturity, with 59% in the advanced and intermediate stages, compared with only 40% last year. More banks are identifying key risks and opportunities across different time horizons in their disclosures, completing materiality assessments for climate risks, and detailing information on the specific actions in progress to mitigate risks and seize opportunities. The materiality assessments, however, are still typically based on qualitative analysis, with only a few firms translating these risks and opportunities into expected financial impact for investor consideration. The lack of financial impact assessment continues to be an important gap, which is linked to the current limitations in climate stress testing and scenario analysis.

Figure 8: Share of advanced or intermediate disclosures by TCFD recommendation – Existing Disclosers versus New Disclosers

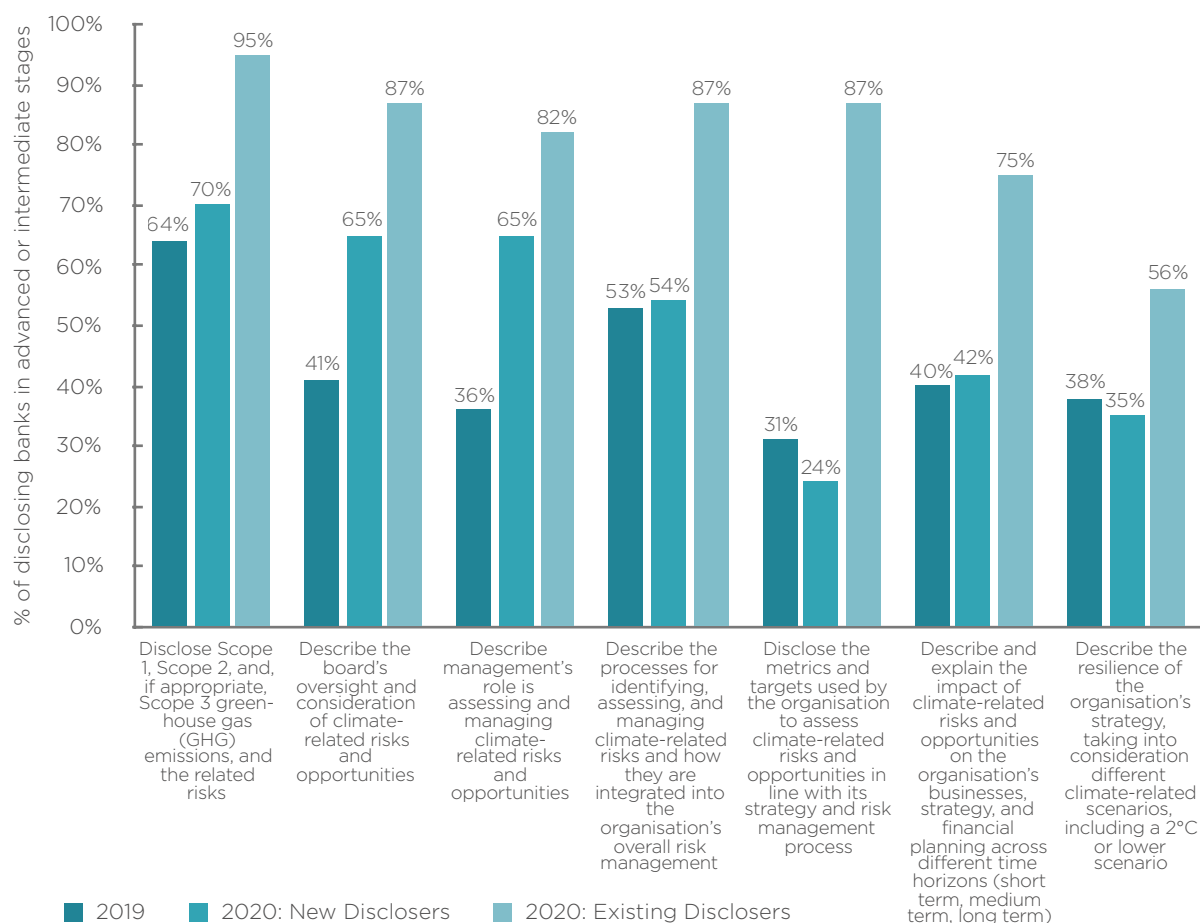


Figure 8 findings: Early TCFD adopters evidence more-advanced disclosures than recent joiners.

As expected, banks that are disclosing under the TCFD for their second, third, or fourth time (Existing Disclosers) evidence significantly more-mature disclosures than banks disclosing for the first time (New Disclosers).

Although New Disclosers are less mature than Existing Disclosers, they evidence more advanced maturity than the Existing Disclosers had in 2019 in all but two of the recommendations ('describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario' and 'disclose the metrics and targets used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process'). This indicates that learnings across the industry have been assimilated by new disclosing banks.

Disclosure maturity by bank size

Figure 9: Share of advanced or intermediate disclosures by TCFD theme – large banks versus medium and small banks

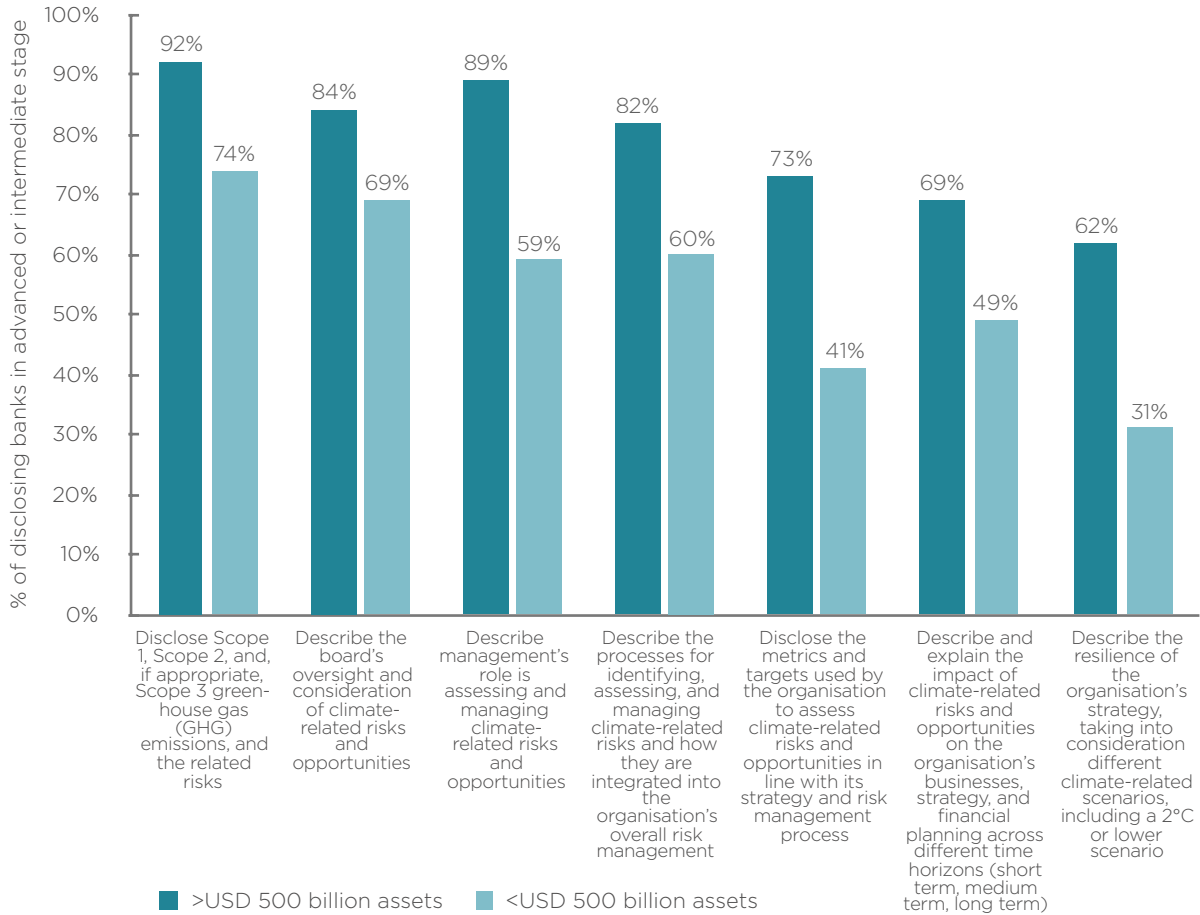


Figure 9 findings: Most advanced - and intermediate-stage disclosures are produced by the largest banks.

Looking at the maturity by bank size, there is a clear difference between large banks (>USD 500 billion in assets) and medium and small banks (<USD 500 billion in assets). Clearly, larger banks have greater resources to invest in the implementation of TCFD against other competing business priorities (especially as many of the aspects are still voluntary in many regions). In addition, the majority of large banks are Existing Disclosers as opposed to New Disclosers, which means they have been reporting on TCFD for longer and tend to be more mature (see figure 8). Unsurprisingly the largest discrepancies in maturity are in disclosure of 'metrics and targets used by the organisation to assess climate-related risks and opportunities' (32 percentage point difference) and 'resilience of the organisation's

strategy' (31 percentage point difference). These are some of the most complex aspects of the TCFD framework, and a strong disclosure requires significant capability investment and technical expertise.

Are banks on the right track?

Assessing the maturity across all recommendations, we believe that the banks that are disclosing against the TCFD framework are, on average, in the middle of the five-year implementation path as set out by the Task Force in 2017 (see below). There has been an uptick in adoption and further development of information provided, particularly in risk integration and governance. This is approximately the level where

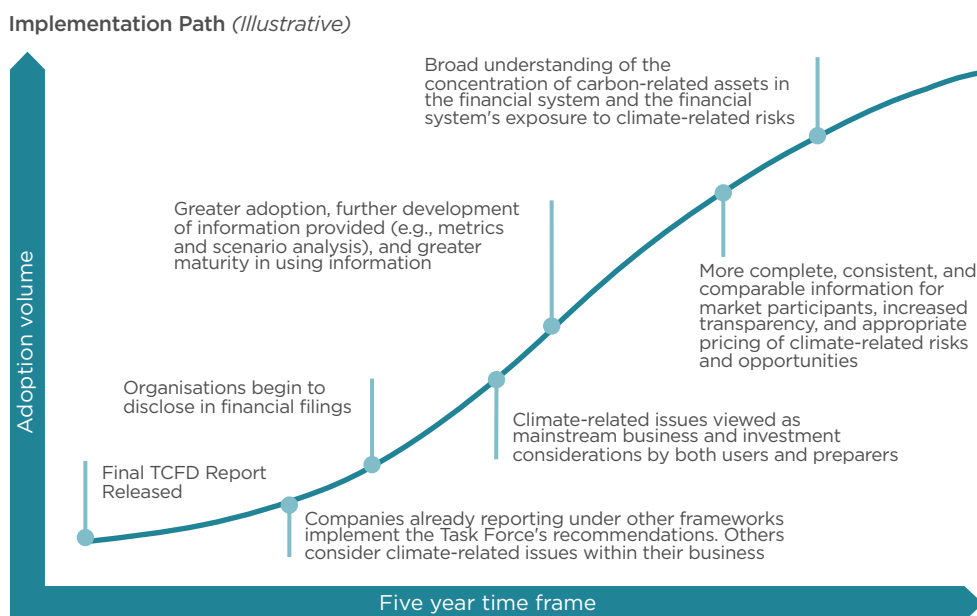
we would expect organisations to be in 2020. Of course, there is a large proportion of the sector yet to disclose or even endorse the framework. Much work is to be done to increase buy-in, and regulatory support will help in this endeavour.

To get to the next stage of implementation maturity, the sector needs to show more consistent and comparable information to support the pricing of climate-related risks and opportunities and to understand the concentration of carbon-related assets in the financial system. The progress observed to date shows that the sector is still defining the standard tools for stress testing, the most relevant risk metrics, and the preferred approaches for effective climate risk integration in the banking sector. A key additional challenge across the sector is for banks to

evidence how financing emissions will be reduced to support global environmental goals, which is essential to achieve decarbonisation of the economy. Currently, disclosures typically focus on risk assessments without considering portfolio adjustments over time that support decarbonisation pathways. In the future, more banks should incorporate financing commitments in risk assessments and consider reducing exposure to carbon-intensive activity.

We believe that to get to the next level of disclosures and achieve increased standardisation, there is a real need for broader and deeper collaboration as well as more prescriptive industry and regulatory guidance.

TCFD guidance - implementation path¹⁸

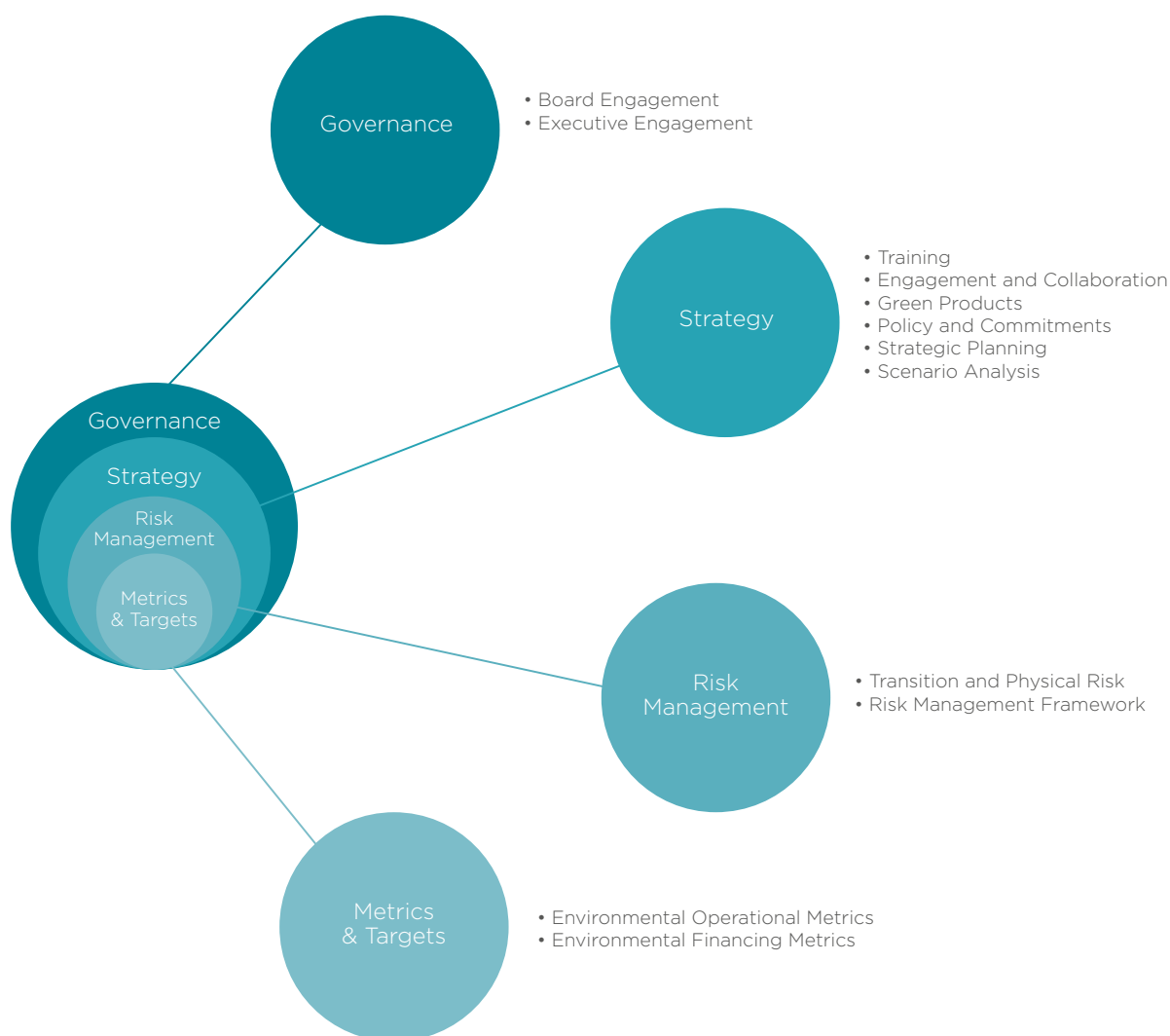


18. Implementing the Recommendations of the TCFD (TCFD, 2017).

Disclosure maturity by theme

The following section analyses the maturity of banking disclosures at a more granular level (theme level) in relation to the core components of the TCFD framework (Governance, Strategy, Risk Management, and Metrics & Targets). The themes analysed are mapped to the TCFD framework as follows¹⁹:

Click on a section to jump to maturity assessment results.



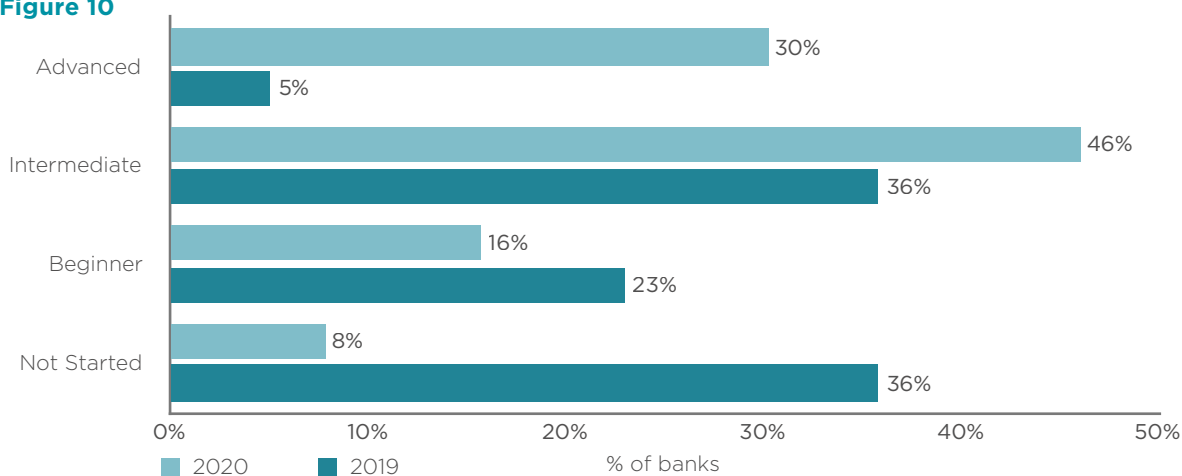
¹⁹ There are updates to the themes assessed since last year's report, namely the introduction of Strategic Planning as a separate theme, and the re-naming of the themes in Metrics and Targets ('Environmental Operational Metrics' replaces 'Carbon Emissions' and 'Environmental Financing Metrics' replaces 'Carbon Metrics').

Governance

Theme: Board Engagement

TCFD Disclosure 1: Describe the board's oversight and consideration of climate-related risks and opportunities		
Beginner	Intermediate	Advanced
Evidence of board oversight for risks and opportunities	Description of specific roles and responsibilities of the board in relation to climate	Evidence of specific reviews and decisions made by the board (climate considerations)

Figure 10



	Not Started	Beginner	Intermediate	Advanced
2020: Existing Disclosers	3%	10%	46%	41%
2020: New Disclosers	14%	22%	46%	19%

Figure 10 findings: There has been a significant increase in board engagement, with the majority of disclosing banks reaching the advanced or intermediate stage in 2020. However, disclosures evidence a broad range of views in relation to the approach by which boards should provide oversight.

There has been a marked increase in board engagement on climate-related risks and opportunities over the past year. Most disclosing banks show evidence of specific roles and responsibilities for the board in relation to climate and disclose information on how adequate oversight is achieved.

Examples of elements referenced in disclosures include board-level training, board meetings held in relation to climate-related issues, metrics reviewed by the board, and key decisions and actions made by the board in relation to climate. Banks are frequently including organisational charts to show the interaction between committees.

Emerging disclosure topics within board engagement include board compensation linkage

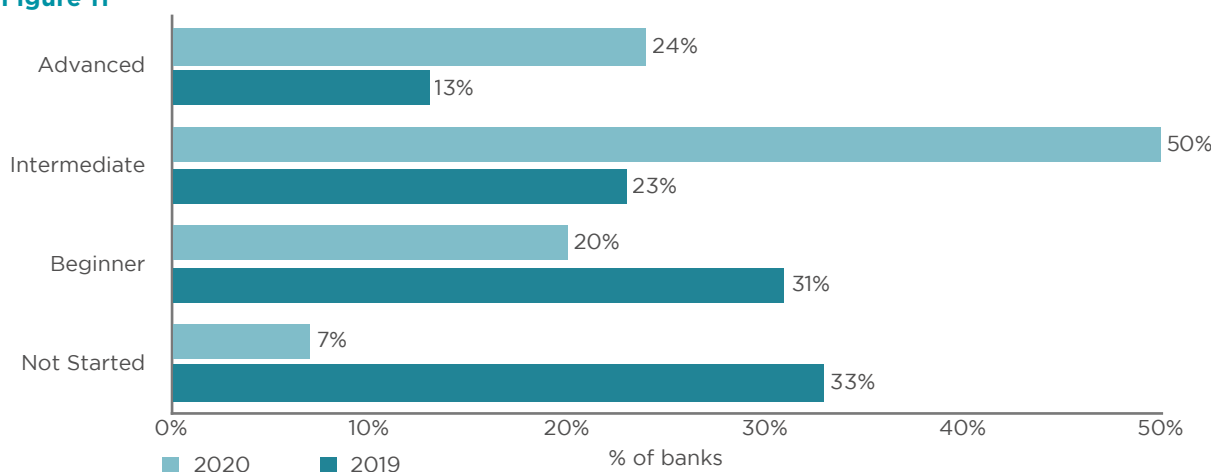
to climate risk management to support incentive alignment and the description of board members' experience to support climate change oversight.

Whilst there is clear evidence of industry progress, a key challenge in this theme is richer guidance of minimum board expectations in relation to climate risk. For example, the disclosures evidence important variation in the frequency of board-related meetings, the types of materials reviewed, and the climate-related decisions that involved the board. Further industry guidance and emerging climate risk regulatory requirements will be important to formalise board engagement expectations across the sector, ensuring they are proportionate to the materiality of the risks identified.

Theme: Executive Engagement

TCFD Disclosure 2: Describe management’s role in assessing and managing climate-related risks and opportunities		
Beginner	Intermediate	Advanced
Committee in place to provide oversight of risks and opportunities (executive level)	Description of specific roles and responsibilities of the executive committee, as well as new executive roles	Evidence of specific reviews and decisions made by the committee (climate considerations)

Figure 11



	Not Started	Beginner	Intermediate	Advanced
2020: Existing Disclosers	3%	15%	44%	38%
2020: New Disclosers	11%	24%	57%	8%

Figure 11 findings: Similar to board engagement, the majority of disclosing banks have reached the advanced or intermediate stage for executive engagement.

In addition to increased board engagement with climate-related issues, most disclosing banks now have in place at least one senior management committee responsible for the management of climate-related issues and an individual senior management executive responsible for climate. For UK-regulated banks, this has been supported by the requirement to comply with PRA’s Supervisory Statement 3/19 ‘Enhancing banks’ and insurers’ approaches to managing the financial risks from climate change’, which stipulated that banks were required to assign responsibility for managing the risks arising from climate change to an appropriate Senior Management Function (SMF) under the Senior Managers Regime (SMR). Formal senior management responsibility for climate risk has typically been assigned to the Chief Risk Officer or Chief Financial Officer.

Bank disclosures reference the management-level committees with climate oversight, typically with illustrations of organisational structures, details of meeting frequency, and descriptions of the responsibilities of these committees. Banks are also disclosing key responsibilities across the first and second line of defence in relation to the management of climate risk.

More-mature banks are able to evidence examples of activities completed by executive committees and key functions throughout the year, such as reviews of climate implementation strategy progress, climate risk portfolio analysis, external engagement initiatives, and environmental policies. Additionally, these banks are able to clearly highlight the link between the various committees and scope boundaries, considering both opportunities and risks, regional coverage, and business coverage.

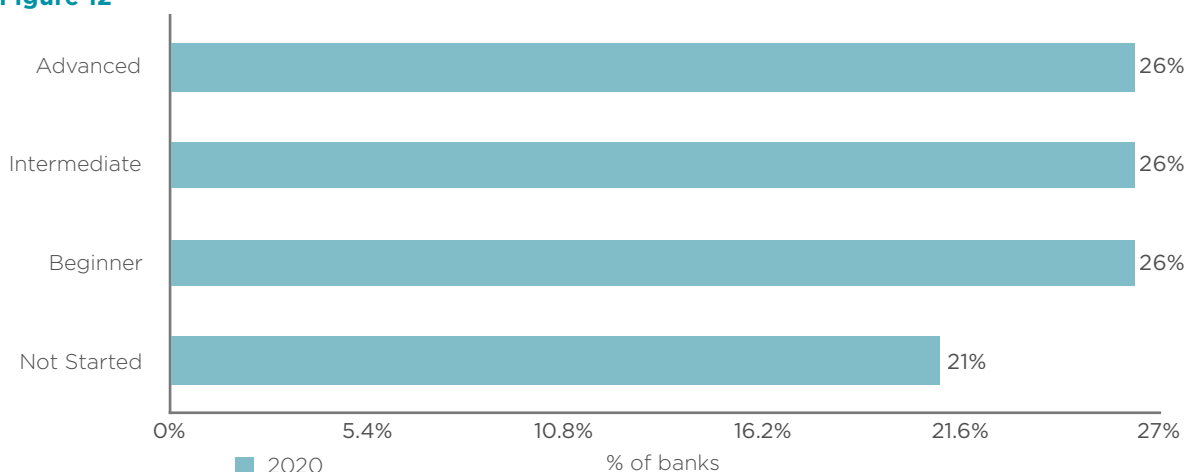
Strategy

TCFD Disclosure 3 & 4: Describe and explain the impact of climate-related risks and opportunities on the organisation’s businesses, strategy, and financial planning across different time horizons (short term, medium term, long term)

Theme: Strategic Planning

Beginner	Intermediate	Advanced
Identification of short-, medium-, and long-term horizons in consideration of the assets and infrastructure of the organisation	Description of specific climate-related issues for each time horizon that could have a material impact for the organisation	Evidence that these issues are integrated in financial strategy and risk as well as opportunity prioritisation (e.g. costs, revenue, capital expenditures, product offering, adaptation and mitigation activities, supply chain, etc.)

Figure 12



	Not Started	Beginner	Intermediate	Advanced
2020: Existing Disclosers	23%	13%	23%	41%
2020: New Disclosers	19%	41%	30%	11%

Figure 12 findings: There are significant differences in maturity between New Disclosers and Existing Disclosers. The majority of New Disclosers are in the beginner or not started stages.

An important challenge in the TCFD framework is to effectively evidence the integration of climate issues into strategic planning. We have created a stand-alone theme for this report to provide a more specific assessment of progress in this key area. The results highlight important differences between banks that have been reporting for two or more years and those that are reporting for the first time. Among New Disclosers, 60% have either not started disclosing how they integrate

climate issues into strategic planning or are in the beginner stage. By contrast, only 36% of Existing Disclosers have either not started or are in the beginner stage.

More-mature disclosers describe the key climate-related risks and opportunities that could impact the organisation and provide an indicative view of time horizons over which such risks or opportunities may materialise. Organisations often describe the impact of climate on

traditional risk types as recommended by the framework, including credit risk, reputational risk, liquidity risk, and market risk, highlighting how transition and physical considerations could impact the risk profile of the organisation. Many organisations consider climate as an emerging risk in their risk taxonomies.

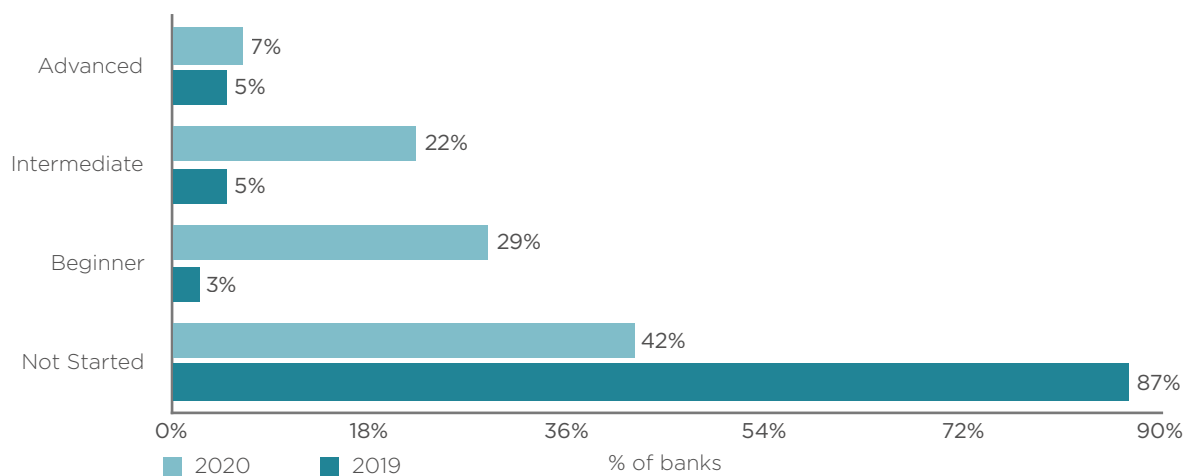
Unfortunately, disclosures often lack quantitative estimates to assess the potential impact of the risks and opportunities identified. Even for the most advanced banks – those that have started reporting estimates of financial impact – there are a broad range of approaches, assumptions, and methodologies underpinning the impact

assessments. Examples include the methodologies applied to identify carbon-intensive assets in the portfolio and the assumptions considered with regard to the severity and timing of transition and physical risks. Further development of industry guidance should help banks achieve a higher level of standardisation and comparability. As expected, there is strong evidence of banks relying on existing TCFD guidance produced directly by the Task Force. The Network for Greening the Financial System (NGFS) and the United Nations Environment Programme Finance Initiative (UNEP FI) are among key additional sources referenced.

Theme: Training

Beginner	Intermediate	Advanced
Training objective disclosed	Description of specific teams being trained	Metrics of training and/or targets

Figure 13



	Not Started	Beginner	Intermediate	Advanced
2020: Existing Disclosers	36%	23%	28%	13%
2020: New Disclosers	49%	35%	16%	0%

Figure 13 findings: Training continues to be an immature theme in banking TCFD disclosures. The majority of banks are in the not started or beginner stages.

Training continues to be the least mature theme in TCFD disclosures. There are some examples where training has been rolled out extensively across an organisation and a few examples targeting specific roles and functions. Overall, however, nearly 50% of New Disclosers and 36%

of Existing Disclosers do not refer to training. Education to raise awareness of climate risks and opportunities is crucial to achieving a climate-conscious culture. Training is an area that requires much more development going forward.

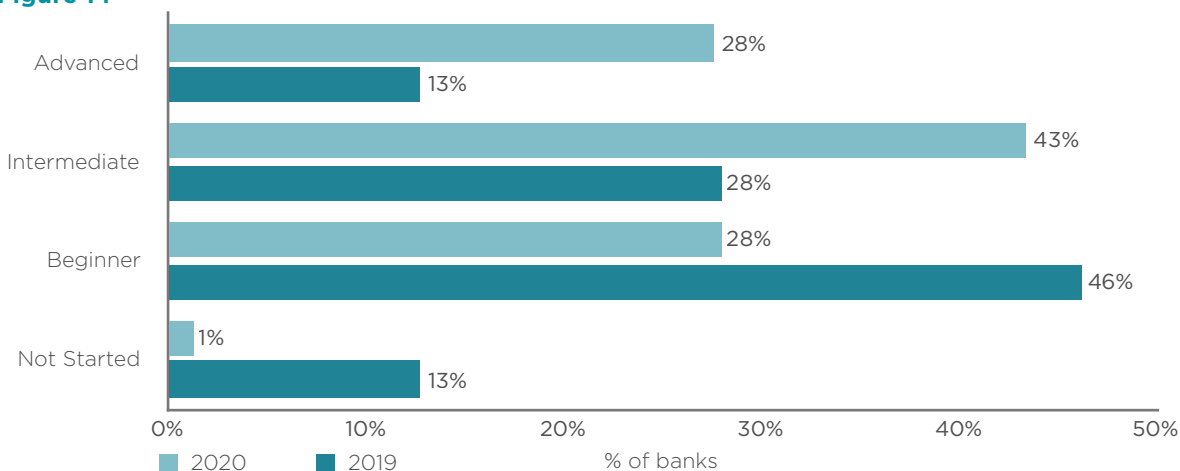
Common training examples include the launch of e-learning modules on environmental and climate change issues and specific training for advisors on sustainability products. More-advanced banks disclose the number of employees trained and detail specific topics that these training programmes have covered, including

The Equator Principles (a risk management framework to assess environmental and social risk), environmental and social screening procedures, and existing banking environmental policy considerations. Several banks report board- and senior management-level training on climate.

Theme: Engagement and Collaboration

Beginner	Intermediate	Advanced
Endorsement of climate and broader ESG initiatives, e.g. Equator Principles, UN Sustainable Development Goals (SDGs), Paris Agreement, Principles for Responsible Investing (PRI), etc.	Beginner criteria and evidence of internal collaboration (e.g. creation of inter-discipline forum, research team) or external collaboration (e.g. partnership with another organisation)	Internal and external collaboration evidence as well as endorsement of global initiatives

Figure 14



	Not Started	Beginner	Intermediate	Advanced
2020: Existing Disclosers	0%	10%	46%	44%
2020: New Disclosers	3%	46%	41%	11%

Figure 14 findings: The majority of Existing Disclosers have reached the advanced or intermediate stages.

This has been a year of increased engagement and collaboration across the banking sector on tackling climate risk and opportunities. As the industry’s collective knowledge on the subject has grown, new alliances have formed. There is more collaboration across financial services more broadly to leverage existing operational expertise. The results highlight significant engagement progress among Existing Disclosers (90% are in

the intermediate and advanced stages) and New Disclosers (52% are in the intermediate and advanced stages).

Examples of external engagement cited by banks include collaboration with sustainability rating companies (e.g. Sustainalytics, Moody’s, and S&P), participation in regulatory forums such as the Climate Risk Financial Forum, and in investor

initiatives such as the Climate Action 100+, which aims to ensure the largest corporate greenhouse gas emitters take climate action. Several banks are collaborating with the Science-Based Targets initiative (SBTi), which aims to help companies to develop clearly defined paths to reduce emissions in line with Paris Agreement goals. An additional example of external collaboration is the Partnership for Carbon Accounting Financials (PCAF), which many banks are participating in with the aim of developing a standardised approach to measure and disclose greenhouse gas emissions associated with loans and investments (finance emissions).

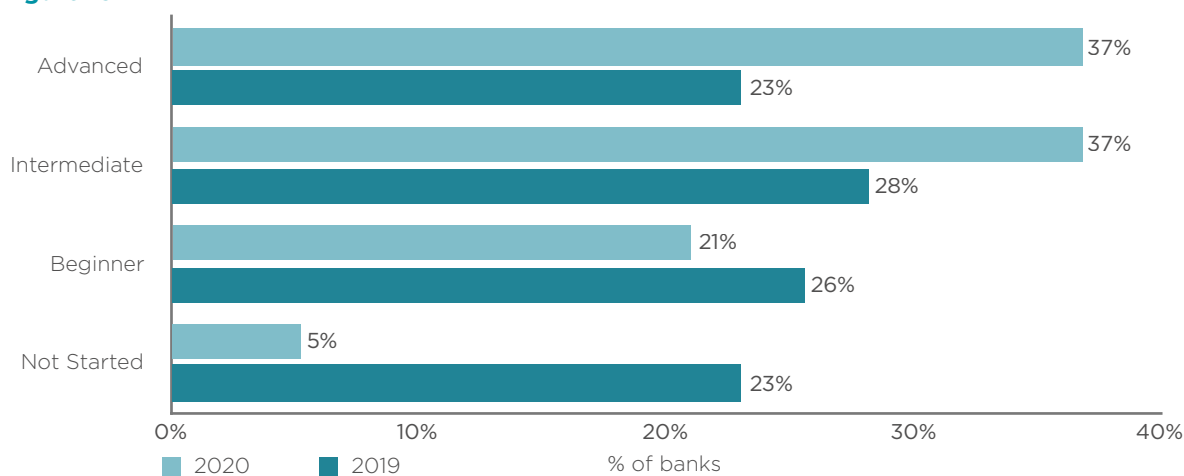
More-mature organisations have engaged with academic institutions and the insurance industry to develop cutting-edge methods in physical and transition risk measurement and scenario analysis. There is also increased engagement with clients to support their transition to a low-carbon economy.

In addition to engagement with external partners, there has been an increase in internal collaboration on climate-related issues. More banks have created sustainable finance teams and there is more evidence of internal collaboration across functions to support climate integration into risk management, client servicing, and business planning.

Theme: Green Products

Beginner	Intermediate	Advanced
Evidence of green product development in progress	Evidence of green product offering	Metrics for green reporting and targets

Figure 15



	Not Started	Beginner	Intermediate	Advanced
2020: Existing Disclosers	0%	5%	36%	59%
2020: New Disclosers	11%	38%	38%	14%

Figure 15 findings: The majority of disclosing banks have reached the advanced or intermediate stages.

There are many examples of green product offerings in bank disclosures, with the more-mature banks disclosing metrics and targets.

The vast majority of banks disclosing in 2020 have a green product offering. These include advisory services, specific retail and commercial

financing products, and funding of large-scale climate-mitigation or adaptation projects. Examples of products include green bonds linked to SDGs, green car loans (loans to acquire electric cars), renewable energy financing, and green mortgages (loans for acquisition of energy efficient homes).

Several banks observed that this theme is challenging because of the lack of standardised definitions for green financial products. This issue is likely to improve with the EU Green Bond Standard becoming law and the adoption of the EU green taxonomy in Europe (EU Taxonomy Regulation), targeted to wider financial market participants offering financial products in the region. The European Banking Federation and the UNEP FI programme are launching a project to

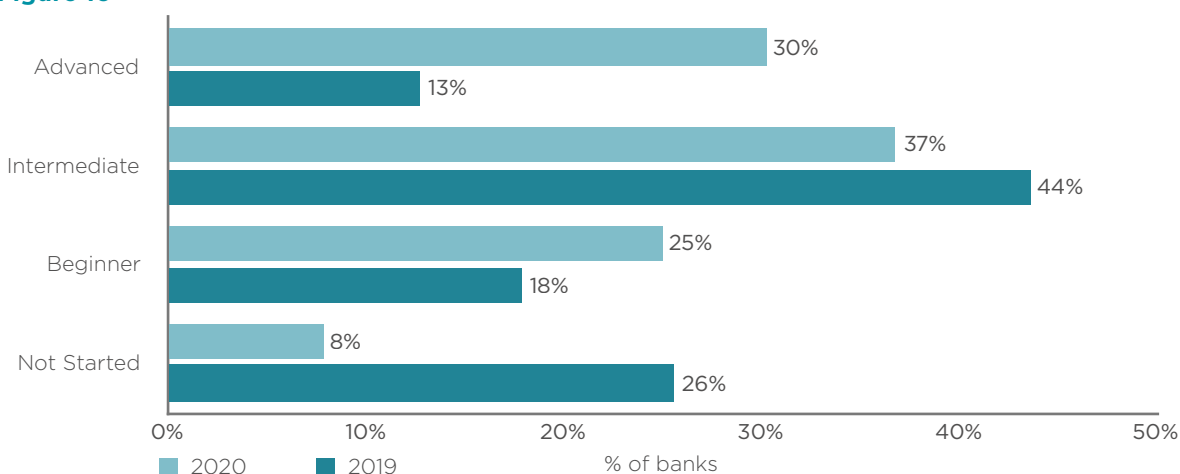
assess the extent to which EU Taxonomy Regulation activities could be applied to core banking products.

In the absence of a regulatory framework for green and sustainable products, banks are currently following market guidance such as the Green Loan Principles of the Loan Market Association, the Green Bond Principles from the International Capital Market Association, and the Equator Principles for Project Finance-related offerings.

Theme: Policy and Commitments

Beginner	Intermediate	Advanced
Commitment to review position statements and policies	Evidence of policy amendments (environmental considerations)	Intermediate criteria and lending restrictions in high impact sectors

Figure 16



	Not Started	Beginner	Intermediate	Advanced
2020: Existing Disclosers	3%	13%	38%	46%
2020: New Disclosers	14%	38%	35%	14%

Figure 16 findings: Banks are increasingly making policy amendments and setting targets in high-impact sectors, but more commitments are required to ensure alignment with Paris Agreement goals.

There has been a pronounced increase in the level of lending targets set by banks in high impact sectors as well as policy commitments to reduce the impact of lending activities. Disclosures reference the development of specific climate policy guidance for carbon-intensive industries and controls already in place for transaction- and client-level processes. Examples of sectors typically referenced include fossil fuels, metals and mining, forestry, and agriculture. Many banks have

committed to limit or stop funding in activities such as coal-fired power, thermal coal mining, extraction of oil from tar sands, arctic energy project financing, and shale gas extraction.

Aside from the climate-linked physical and transition risks driving policy review, banks are under increasing pressure from a reputational risk perspective as stakeholders scrutinise the environmental impact of their portfolios. Clearly,

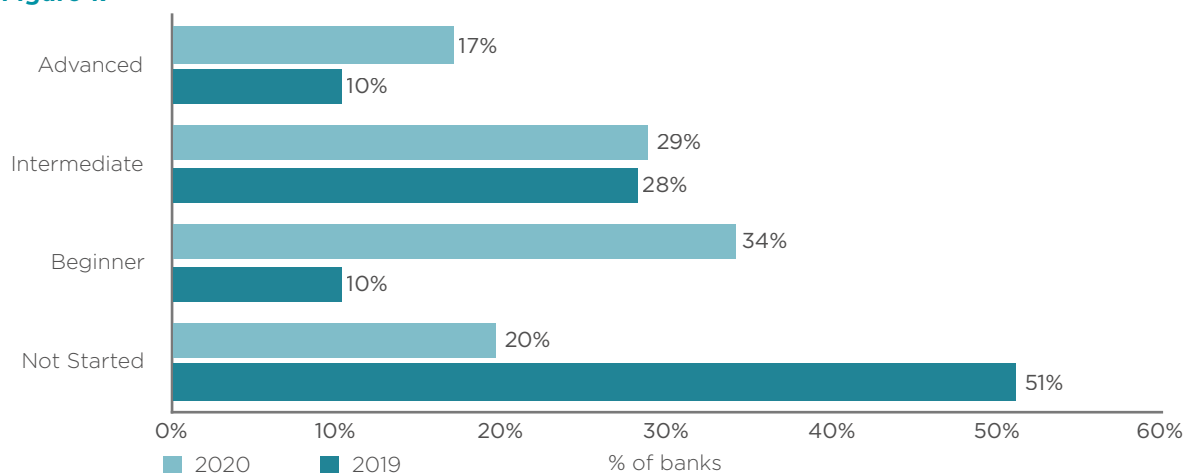
there are still concerns that policy restrictions may not be sufficient to support a Paris Agreement capital transition: for example, although coal financing activity is diminishing globally, growth in oil and gas financing activity persists²⁰.

Bank disclosures are increasingly referencing previous financing commitments and reporting on how recent activity aligns to such standards. TCFD is becoming an important source for investors to view commitments and expose gaps, which can help drive further climate action in the sector.

Theme: Scenario Analysis

TCFD Disclosure 5: Describe the resilience of the organisation’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario		
Beginner	Intermediate	Advanced
Commitment to complete scenario analysis and enhance stress testing capabilities	Development of specific scenarios (e.g. 2 degrees, 4 degrees, etc.) and sector shocks	Evidence of stress tests completed and of carbon techniques under development such as carbon price calculation in the rate of return and/or disclosure of credit portfolio in high impact sectors (e.g. exposure disclosure)

Figure 17



	Not Started	Beginner	Intermediate	Advanced
2020: Existing Disclosers	10%	33%	33%	23%
2020: New Disclosers	30%	35%	24%	11%

Figure 17 findings: Banks are still largely in early stages of development, with 43% of Existing Disclosers and 65% of New Disclosers in the not started or beginner stages.

20 Banking on Climate Change, Fossil Fuel Finance Report, (Rainforest Action Network, 2020).

The maturity of scenario analysis in the sector has increased, however, this has been less pronounced than in other themes. Less-mature banks disclose plans to focus initially on scenario analysis in certain sectors within their corporate portfolios, with oil & gas as well as power generation being the most referenced priorities.

Several disclosures reference participation in industry initiatives such as the UNEP FI stress testing pilot and the 2° Investing Initiative (2DII) pilot. Several banks that report scenario analysis results either participated in the 2DII pilot or used the open source PACTA for banks tool for their assessments, measuring corporate lending portfolio alignment with a range of climate scenarios and the Paris Agreement targets. For mortgages, several banks have leveraged insurance methodologies and third parties with extensive property data to assess flooding risk impact, coastal erosion, and other physical risks on property value.

The most mature banks have completed cross-sector scenario analysis exercises developing in-house methodologies or leveraging consultants and external models. Commonly referenced scenarios include International Energy Agency scenarios, Intergovernmental Panel on Climate Change (IPCC) scenarios, Potsdam Institute for Climate Research (PIK) scenarios, International Institute for Applied Systems Analysis (IIASA) scenarios, and Network for Greening the Financial System (NGFS) scenarios.

Regarding scenario analysis outputs, banks in the advanced stage are typically disclosing expected sector- and/or aggregate-level credit losses. Examples of credit metrics assessed include probabilities of default, expected loss, and loan-to-value estimates.

In general, the scenario analysis completed to date is predominantly focused on transition risk assessments, with fewer banks reporting comprehensive physical risk assessments. Despite many banks' progress in scenario analysis, several acknowledge significant challenges in this area and cite absence of standardised methodologies as well as data limitations.

Another limitation to disclosures in this theme is the potential conflict of interest that banks face. Banks may believe that publicly disclosing outputs from such exercises and revealing potential climate risk-related costs is something that may not benefit the organisation. Currently, acknowledgement of material climate risk exposure in scenario analysis disclosures is unusual, with banks typically highlighting their resilience.

Overall, the results evidence that the sector is still immature in climate scenario analysis with disclosures of even the most advanced banks acknowledging the importance of further work for methodology refinement and comprehensive data analysis.

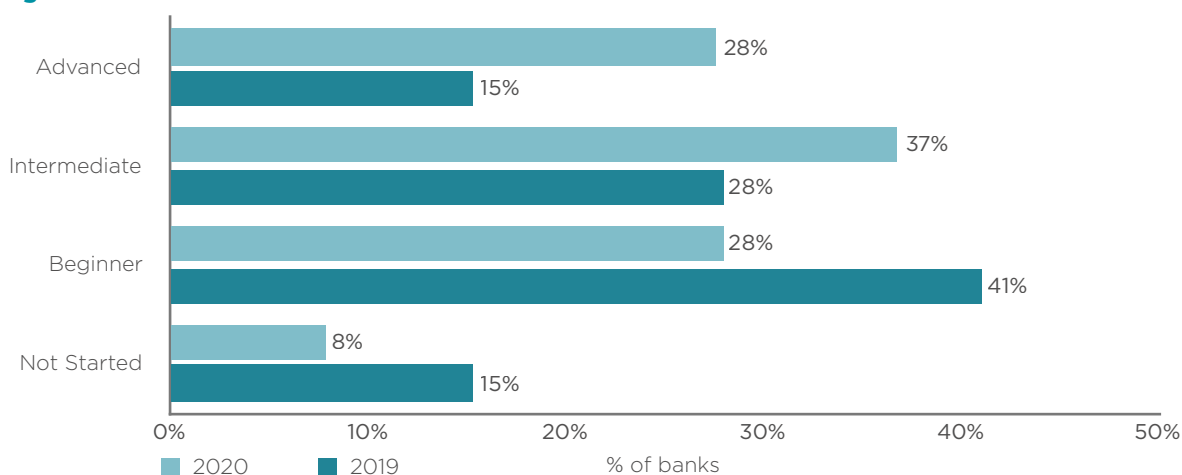
This is clearly an area where more industry guidance and calibration of methodologies is needed to increase the quality of disclosures and to make the information reported more meaningful for investors, credit analysts, and other users of TCFD disclosures. Regulatory initiatives such as the future PRA Climate Biennial Exploratory Scenario in the UK and the European Central Bank climate stress test, should help drive further sector progress and methodology standardisation.

Risk Management

Theme: Transition and Physical Risk

TCFD Disclosures 6-8: Describe the processes for identifying, assessing, and managing climate-related risks and how they are integrated into the organisation's overall risk		
Beginner	Intermediate	Advanced
Objective to assess client's impact on climate change agenda; reference to transition risk and physical risk considerations	Evidence of approach definition (e.g. identification of critical sectors, time horizon for planning, sector, and product considerations)	Adoption of climate risk considerations in credit risk processes (e.g. annual renewal of internal rating, risk factor modelling, customer thermal coal utilisation, transition risk rating development, etc.)

Figure 18



	Not Started	Beginner	Intermediate	Advanced
2020: Existing Disclosers	0%	15%	49%	36%
2020: New Disclosers	16%	41%	24%	19%

Figure 18 findings: The majority of Existing Disclosers have reached the advanced or intermediate stages. New Disclosers are still largely in the beginner or not started stages.

The vast majority of Existing Disclosers are evidencing key considerations underpinning climate risk management within their organisations. Several banks in the advanced stage evidence the development of climate risk heatmaps of sector and geography that integrate the impact of physical and transition risks under a range of scenarios. This information is being considered in portfolio sector allocation and in defining enhanced sector specific screening standards.

There is also increased evidence of climate risk integration in credit ratings. Several banks are starting to integrate climate risk factors into

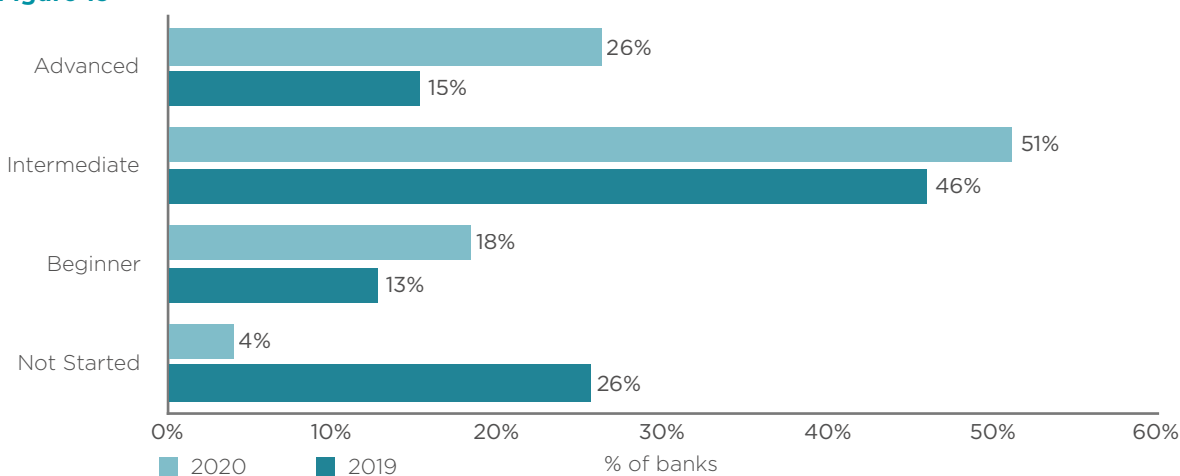
industry risk ratings that feed internal counterparty rating models. More-advanced banks reference a broad range of internal tools and technology solutions that assess climate risk.

In contrast to the results observed in Existing Disclosers, New Disclosers are often still in early stages of development, with 57% of banks in the beginner or not started stages. New Disclosers typically acknowledge plans to integrate standard climate risk assessments in risk management processes and highlight examples of risk factors that are being considered.

Theme: Risk Management Framework

TCFD Disclosures 6-8: Describe the processes for identifying, assessing, and managing climate-related risks and how they are integrated into the organisation's overall risk		
Beginner	Intermediate	Advanced
Consideration of ESG factors in the screening process	Evidence of climate risk integration into processes and frameworks (e.g. ESG criteria application process, evidence of ESR framework, etc.)	Description of specific monitoring tools used (e.g. ESG screening tool reference, EMS system, etc.)

Figure 19



	Not Started	Beginner	Intermediate	Advanced
2020: Existing Disclosers	3%	8%	56%	33%
2020: New Disclosers	5%	30%	46%	19%

Figure 19 findings: The majority of banks are in the advanced or intermediate stages.

There has been progress in the integration of climate risk into enterprise frameworks. More-mature banks detail specific cross-team climate responsibilities and outline key processes underpinning climate risk management in their disclosures. Examples of these processes include tools for screening, periodic monitoring, and enhanced due diligence standards for review and

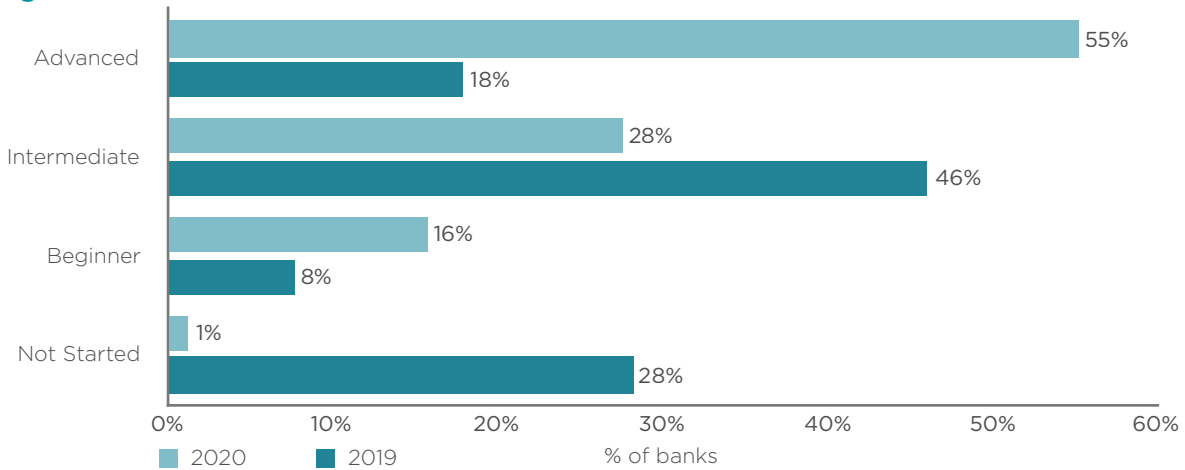
approval of climate-sensitive transactions. Banks often reference the use of third-party tools to complete client environmental screening. Several banks reference the creation of dedicated teams with deep expertise in climate risk to support risk assessments, particularly for carbon-sensitive sectors including fossil fuels, forestry, and mining.

Metrics and Targets

Theme: Environmental Operational Metrics

TCFD Disclosure 9: Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks		
Beginner	Intermediate	Advanced
Currently developing measurement tools	Targets and/or description of mitigation initiatives (e.g. purchasing of renewable energy); some evidence of CO ₂ emission metrics disclosure (e.g. total CO ₂ emissions, with limited segmentation); and disclosure of other environmental factors (water usage, waste management, etc.)	Reporting CO ₂ emission metrics, targets, and description of mitigating initiatives

Figure 20



	Not Started	Beginner	Intermediate	Advanced
2020: Existing Disclosers	0%	5%	28%	67%
2020: New Disclosers	3%	27%	27%	43%

Figure 20 findings: Environmental operational metrics continues to be the most advanced theme, with 83% of banks in the advanced or intermediate stages.

Environmental operational metrics are widely detailed in the TCFD disclosures of reporting firms. Banks typically detail scope 1, scope 2, and scope 3 operational emissions, driven by activities such as employee travel, transport, waste management, water consumption, paper consumption, and energy usage in facilities in line with the Greenhouse Gas Protocol. There is also evidence of progress-tracking against targets and identification of key internal drivers of the operational footprint.

A common theme in disclosures is the operational carbon neutral status (excluding scope 3 financing emissions). A number of firms already

achieved this status and many others have set it as a formal target for the coming years, often supplementing operational carbon reduction targets with carbon offsetting schemes.

There is more granular evidence in the year-on-year figures reported, with firms frequently detailing additional analysis and metrics for the key drivers of their operational footprint. Examples of future targets set by firms include 80-100% renewable energy sourcing, as well as reduction targets on transport, waste, and water consumption.

Many firms reference the development of these targets in collaboration with the Science Based Targets initiative (SBTi). Aside from absolute

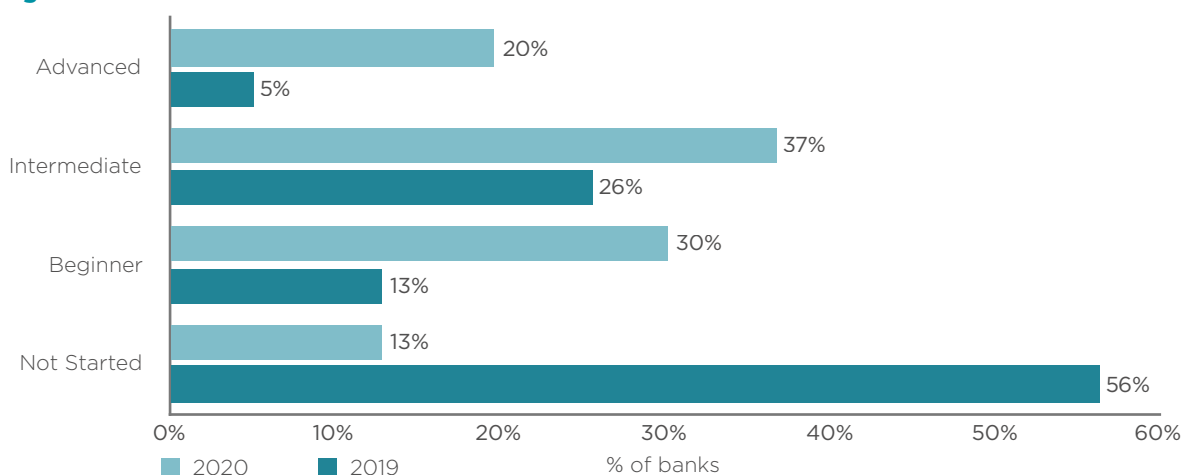
emissions tracking, banks use metrics including estimates of GHG emissions intensity ratios such as tons of CO₂ equivalent per employee or per revenue. An emerging theme in disclosures is the development and tracking of an internal carbon

price, which is assessed at regular intervals, resulting in a monetary value estimate of the operational emissions of the group. The proceeds of this exercise are used to fund emission reduction projects globally.

Theme: Environmental Financing Metrics

TCFD Disclosures 10-11: Disclose the metrics and targets used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process		
Beginner	Intermediate	Advanced
Currently developing measurement tools	Targets or plans (e.g. integrating CO ₂ measurement in funds, developing climate risk metrics, etc.)	Evidence of measurement (e.g. measure of balance sheet and credit risk-weighted assets across fossil fuel sectors, etc.)

Figure 21



	Not Started	Beginner	Intermediate	Advanced
2020: Existing Disclosers	3%	10%	51%	36%
2020: New Disclosers	24%	51%	22%	3%

Figure 21 findings: There are material differences between New Disclosers and Existing Disclosers, with the latter largely in the intermediate or advanced stages and the former primarily in the beginner or not started stages. Disclosure of risk-related metrics continues to be a challenging area for banks.

Environmental Financing Metrics have progressed substantially compared to 2019 disclosures, when 69% of banks had either not started or were in the beginner stage. Despite the progress, the theme continues to be one of the least mature, with only 57% of banks in the advanced or intermediate stages.

There is increased evidence of financial metrics and targets in relation to opportunities, with many banks setting green financing targets and

tracking progress against such objectives, typically in the form of total financing provided to sustainable initiatives, volume of sustainable facilitation in capital markets, and sustainable assets under management. Many banks include environmental financing dashboards in their disclosures, which consolidate these metrics and reference progress against the targets set. There is also increased information on the methods used to assess opportunities and to define key targets.

More-mature banks provide estimates of carbon emission savings resulting from green financing and granular disclosure of green metrics by business and product type.

Disclosure of risk-related financing metrics and targets, however, is still substantially less mature than other themes. Banks that do report risk metrics typically disclose their loans committed to carbon sensitive sectors and comment on the materiality of these exposures. They tend to be Existing Disclosers as opposed to New Disclosers.

Several advanced banks report risk metrics on the current alignment of their portfolios against possible decarbonisation pathways, providing an assessment of whether they are on track with certain decarbonisation scenarios in their current financing-generated emissions. This analysis is typically reported for a few sectors, with plans to continue enhancing methodologies and expand sector analysis in the future. In addition, more-advanced banks often calculate the estimated average carbon emission-intensity of financing in key sectors.

Aside from current alignment with portfolio decarbonisation targets, several advanced banks are starting to consider their target energy mix and detailing the financing emission reduction plans for certain carbon-intensive activities. However, the scope of decarbonisation plans is still limited and typically focused on coal and certain mining activities. Despite the progress in identifying the current state of alignment of portfolios against decarbonisation paths, there is still limited information on how the organisations intend to adjust their portfolios to fully achieve alignment with global decarbonisation pathways.

Furthermore, the range of risk metrics reported varies substantially depending on the risk methodologies applied, which makes comparability within the sector very challenging. Examples of metrics referenced include climate VaR (climate value at risk), climate-adjusted loan-to-value ratios, portfolio carbon intensity (finance carbon emissions based on revenue or other financial metrics), portfolio-implied temperature (level of future warming with which the portfolio is currently aligned), and total carbon-financed emissions (absolute estimate of CO₂ generated by bank financing).

Overall, the sector's target setting is skewed more towards climate-related opportunities than risks. In the future, we should see banks setting more formal decarbonisation targets linked to metrics such as the carbon intensity of the portfolio and the share of portfolio financing in carbon-intensive sectors such as oil and gas. Clearly this is another example of a theme where the sector requires more industry guidance and standardisation. Further sector alignment in risk methodologies and metrics will provide transparency in relation to climate risk exposures and support more adequate pricing of such risks in the market.

2. Results

c. Best Practice

This section highlights examples of emerging best practice across the banking industry for the four main pillars of the TCFD framework.

Governance

There is increasing maturity in the disclosures of the governance arrangements within banks for climate-related issues, with more firms including the names and titles of individuals and their associated responsibilities. Illustrations of the governance structures in place for climate-related issues have also been provided by several banks, with associated descriptions of what each committee is responsible for, as well as more detail on the specific initiatives of relevant accountable governance committees (see annex c. for illustrations).

Beyond embedding board oversight and executive engagement in organisations, there are examples of banks that disclose the sustainability and climate expertise of board members and directors. For example:

- At **BNP Paribas**, the Corporate Governance, Ethics, Nominations and CSR Committee (CGEN) is responsible for overseeing issues related to social and environmental responsibility, including mitigation of climate change. The committee comprises independent directors, some of whom have extensive professional experience with Corporate Social Responsibility (CSR) and climate-related issues: members include a renowned biodiversity specialist and a CEO deeply involved in the energy transition.
- **BMO's**²¹ directors are recruited and evaluated based on a skills matrix that includes sustainability experience, and eight of the bank's 14 current independent directors have such experience.

There has also been a trend of banks linking compensation to sustainability targets, including targets related to climate change. Examples of this include:

- At **Citigroup**, sustainability and climate-related goals are incorporated into several executive scorecards, which are key elements of performance review and incentive compensation. Moreover, climate change strategy and risk management performance targets are incorporated into annual goals and performance review processes. Several senior executives and members of their teams who are responsible for developing and implementing climate change capabilities have climate-related performance objectives.
- The compensation granted to key employees of **BNP Paribas** is indexed in part to the group's CSR performance data, in line with energy and climate issues. BNP Paribas established a dashboard consisting of 13 CSR key performance indicators (KPIs) to steer its strategy. The Group Executive Committee and Board of Directors monitor the dashboard on a yearly basis. Two of the criteria are directly related to energy/climate:
 - Amount of renewable energy financing.
 - GHG emissions measured as ton of CO₂ equivalent/number of full-time employees (energy per employee used in buildings and business travel).
- At **Société Générale**, the variable component of annual remuneration of the Chief Executive Officer and Management Committee is linked to climate-related issues.

21 For the latest BMO report, see [BMO Financial Group 2020 Climate Report](#), published January 2021.

Strategy

Banks have detailed their strategic planning with respect to climate-related risks and opportunities as well as their expected impact over specified time horizons:

- **Barclays**²² has provided a clear view of its business plans for the short (0-1 years), medium (1-5 years), and long term (5-30 years). The bank has outlined examples of climate transition and physical risks for each time horizon and provided details on its strategy to support the transition to a low-carbon economy (see annex for further details).
- **BNP Paribas** provides a view of the key risks and climate-related opportunities for the organisation, completing an indicative view of impact materiality and expected time horizons as either short (1 year or less), medium (2 to 5 years), or long term (5 years or more). The potential significance of each risk and opportunity is estimated using a four-degree scale from moderately significant to very significant (see annex for further details).

To enable their organisations to manage climate-related risks and opportunities effectively, more extensive training has begun to be rolled-out at various banks, for example:

- **Credit Suisse** provided training in sustainability risk management to around 540 employees in client-facing roles, control functions, or relevant specialist units in 2019. The training aimed to ensure that the expertise required to address environmental and human rights risks is firmly embedded within the bank.
- **HSBC**²³ noted that employees “completed more than 5,300 sustainability training modules in 2019, a 41% increase since the previous year”. The bank also trained over 800 employees on climate risk to strengthen engagement with customers in 2019.
- At **Citigroup**, key risk and banking personnel are trained on the in-house Environmental and Social Risk Management (ESRM) Policy each year. Topics include environmental and social risks relevant to certain regions and sectors, Equator Principal implementation and Citi’s Sector Standards. The training also includes emerging risks and guidance to help employees recognise environmental and social risk in transactions. In total, more than 590 Citi employees underwent ESRM training in 2019.

There have been interesting examples of collaboration with external parties across the banking industry, including:

- **Bank of America** engaged the climate risk team at the insurance company Willis Towers Watson to conduct a pilot portfolio review. The objective of the initiative was to assess the potential exposure of select residential mortgage portfolios to physical risks.
- **HSBC** partnered with climate change experts at the Massachusetts Institute of Technology (MIT) to produce exploratory transition scenarios. These scenarios were used to raise internal awareness of the different speeds at which transition could occur, the resulting investment requirements, the implications for energy system configuration, and the broad macroeconomic costs.
- **Standard Chartered**²⁴ came together with four international banks to sign the Katowice Commitment in December 2018, pledging to align lending portfolios with global climate goals. The bank has worked closely with Katowice Commitment signatory banks throughout 2019 and 2020. The collaboration has aided the piloting of the 2DII Paris Agreement Capital Transition Assessment (PACTA) tool. Additionally, the organisation engaged several hundred of its largest corporate and institutional clients on how the bank can support their transition to a low-carbon economy and more than 10,000 retail and private bank clients on ESG and impact finance.
- **JPMorgan Chase & Co.** is supporting Carnegie Mellon University’s Community Robotics Education and Technology Empowerment Lab. The project aims to leverage data from leading governmental and research organisations to develop visual narratives related to the physical impacts of climate change. This analysis can be used by governments, businesses, civil society, and other stakeholders to understand and more effectively communicate the impacts of climate change on local communities.

Companies have continued to update policies to align with organisational strategy:

- **Deutsche Bank** has set sectoral risk appetite limits and applied several restrictions under its Environmental and Social (ES) Policy Framework to reduce its support for fossil fuels, including:

22 For the latest Barclays report, see [Barclays PLC Climate-related Financial Disclosures 2020](#), published 31 December 2020.

23 For the latest HSBC report, see [HSBC Holdings plc TCFD Update 2020](#), published February 2021.

24 For the latest view of Standard Chartered Governance see [Standard Chartered TCFD 2020 Facilitating climate action where it matters most](#), published February 2021.

- No financing for new coal-power facilities and a reduction in existing exposure to power companies heavily dependent on coal.
- No financing of new thermal coal mines. It met its 2016 commitment to reduce existing exposure to thermal coal mines by 20% by 2020.
- Lower industry concentration thresholds for the oil and gas, utilities and steel, metals, and mining sectors as of 2019, with inherent long-term climate risks considered.
- **Goldman Sachs** has its Environmental Policy Framework (EPF), which serves as an ambitious roadmap to address critical environmental challenges and promote sustainable economic growth. The EPF includes environmental and social risk guidelines in carbon-intensive sectors, such as:
 - Decline any financing opportunities that directly support the development of new coal-fired power generation unless it has carbon capture and storage or equivalent carbon emissions reduction technology ('CCS').
 - Expand clean energy target to USD 150 billion in financings and investments by 2025 to facilitate the transition to a low-carbon economy.
 - For financings involving any power sector companies that derive a significant portion of their generation from coal, engage with the companies to understand their strategies to diversify away from coal and reduce overall carbon emissions, with the goal of supporting their low-carbon transitions in line with the Paris Climate Agreement.
- **UniCredit** approved and published a new coal policy in November 2019 that prohibits new projects in thermal coal mining and coal-fired power generation. The policy provides restrictive guidelines on:
 - Coal sector projects.
 - General financing, advisory services, or other forms of financial assistance for Coal-Fired Power Generation (CFPG) companies.
 - General financing, advisory services, or other forms of financial assistance for thermal coal mining companies.

The bank has set targets for 2023, including

the phase-out of existing thermal coal mining and CFPG projects. The policy also prohibits financing oil projects or offshore gas projects in the Arctic Circle.

The maturity of scenario analysis has increased across the industry, with results and the impact on various portfolios starting to be disclosed by banks:

- **Barclays** undertook a group-wide exploratory stress test using a three-year, severe but plausible scenario covering both physical and transitional impacts (see annex for further detail on the approach).
- **ING** uses the 'Terra' approach, which is an inclusive, science-based, forward-looking, and engagement-driven approach, for its scenario analysis. With Terra, ING focuses on the sectors in its loan book generating the most climate impact. The bank draws upon two main methodologies for target-setting (Paris Alignment Capital Transition Assessment (PACTA) and the Science Based Targets initiative's Sectoral Decarbonisation Approach (SBTi SDA)) and adheres to two key principles: 1) a sector-based approach and 2) prioritising 'asset-level data' (ALD) for accurate measurement. The bank also provides the Climate Alignment Dashboard (CAD). This demonstrates the CO₂ equivalent (CO₂e) intensity per sector of its portfolio compared to the market and the relevant climate scenario. It also displays the climate alignment target per sector and ING's intended decarbonisation pathway per sector to converge towards the target (see annex for the view of the ING CAD).
- **ABN AMRO** carried out a scenario analysis on its Dutch residential mortgage portfolio, the bank's largest lending portfolio. The analysis is based on the +4°C scenario provided by the Dutch Meteorological Institute. Under this scenario, the bank expects an increase in extreme weather events, including flooding and drought.
- **UBS** has assessed a selection of climate-sensitive sectors using the Paris Agreement Capital Transition Assessment (PACTA) methodology. The analysis compares the technology mix of the UBS corporate lending portfolio against the global corporate economy (see annex for further details).

Risk Management

Banks have developed transition and physical risk methodologies, for example:

- **Deutsche Bank** has an in-house intelligence team in its Enterprise Risk Management (ERM) unit that measures and tracks country and select city-specific risks, including natural hazard risks to assets and operations. These risk assessments inform strategic location planning and scenario design for testing, crisis management, and corporate security plans.
- **HSBC** developed a questionnaire to improve understanding of its customers' climate transition strategies. The bank received responses from over 750 customers within high-risk transition sectors, which represented approximately 34% of its corporate portfolio exposure. This information is being used to inform the bank's decision making and strategy. For instance, this information is helping HSBC to understand which customers need to adapt their readiness to change and identify potential business opportunities to support the transition. The responses are also being used to supplement the management of transition risk in the bank's credit risk management processes.
- The **Macquarie Group** generated physical and transition climate risk vulnerability heat maps for lending and equity portfolios across sectors and geographies.
- **Société Générale** developed a methodology for assessing transition risk impact on corporate credit risk using scenario analysis. The 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 (see annex for additional information on the identification and assessment process).

The sector is now seeing the inclusion of transaction assessments for climate and environmental risk:

- **Canadian Imperial Bank of Commerce (CIBC)** conducts environmental and related social risk assessments of business lending transactions to protect the bank from undesired risks. CIBC's Global Reputational and Legal Risk Policy requires that each credit transaction is examined for potential reputation and/or legal risks, including those of an environmental or a social nature. The bank states that this review process often helps its clients better understand and effectively manage their own risks and liabilities.
- **Citigroup's** Environmental and Social Risk Management (ESRM) Policy sets a framework to assess the potential climate risks and impacts of the clients and projects financed by the bank. Its project-related finance approach aligns with the Equator Principles, including an alternatives analysis of less carbon-intensive technologies for all transactions that exceed 100,000 tons of carbon dioxide emissions and a risk assessment of negative impacts from physical climate risk.

Metrics and Targets

Environmental Operational Metrics

- **Credit Suisse** manages and discloses greenhouse gas emissions (scope 1, 2, 3) from its in-house operations based on an ISO 14001-certified environmental management system, provides a breakdown of the sources of its energy consumption, and outlines its strategy for global greenhouse gas neutrality.
- **Société Générale** discloses data on the impact of its operations, including a year-on-year view of scope 1, 2, and 3 GHG emissions, and the distribution of sources of its carbon footprint. Additionally, the bank set a target for carbon reduction in its 2014-2020 programme, committing to cut its GHG emissions per occupant by 25% and to improve the energy performance per occupant of its buildings by 20% by 2020, compared to 2014 levels.
- **Goldman Sachs** discloses a three-year track record of energy and greenhouse gas emissions for comparability, calculating several carbon intensity metrics including carbon emissions per revenue, carbon emissions per employee, carbon emissions per rental square foot, as well as granular metrics underpinning scope 1, 2, and 3 total figures.

Environmental Financing Metrics

- **BMO** has outlined exposures for sectors that could be considered relevant for climate risk purposes and aims to avoid overexposure to these sectors by maintaining a well-diversified portfolio. Exposures in each sector are reported as a percentage of the total portfolio net loans and acceptances. In addition, the bank reports its total lending value linked to carbon-related assets and its percentage contribution relative to total loan portfolio. The bank also discloses the split of power generation linked to low-carbon versus fossil-fuel based energy generation.
- **Commonwealth Bank of Australia** details its energy exposures and year-on-year changes in the portfolio for increased transparency. The disclosures address natural resources, infrastructure, energy generation, and network and retailers.
- **Royal Bank of Canada** reports the absolute exposure value in nine carbon-sensitive sectors and the share of total portfolio exposure they account for. The bank has also completed an assessment of sensitivity for each of these sectors against transition and physical risk drivers. In addition, the bank reports the power generation lending split and sustainable finance performance metrics.
- As part of **HSBC's** support of the transition to a low-carbon economy, it outlines its pledge to provide facilitation and investment of sustainable finance (USD 100 billion by 2025). The bank has included its current progress against that goal (USD 52.4 billion at the end of 2019) and a view of what comprises that funding (USD 43.6 billion related to green or sustainable financing).
- **Société Générale** is monitoring its Sustainable and Positive Impact Finance (SPIF) to extend credit, leasing, and customer support in the growth of sustainable activities and to show the evolution and distribution of its climate-related financing over time.
- **Citigroup** includes metrics on the breakdown of its USD 100 billion environmental funding by environmental criteria and links to further information, including a breakdown by region and business in its 2019 Global ESG Report.
- In the last reporting cycle, **Standard Chartered** issued its inaugural sustainability bond linked to the SDGs and focused on impact within emerging markets. The organisation launched the world's first sustainable deposit product for both retail and corporate and institutional clients, which is now available in Hong Kong, London, New York, and Singapore. The bank also published a new Green and Sustainable Product Framework, externally verified by Sustainalytics.

To capitalise on the opportunities of climate change, banks have continued to provide a suite of green products and services to clients and customers, for example:

See annex page 73 for additional best practice examples from disclosures released at the time of publication of this report.

3. Recommendations

Based on the findings outlined in this report, BCS Consulting has identified recommendations for banks to manage climate-related risks and opportunities more effectively and enhance their TCFD disclosures. These recommendations are segmented to target:

1. Smaller banks that typically have less-mature disclosures; and
2. Larger banks that typically have more-mature disclosures.

We also provide a few general recommendations that apply to all banks.

General recommendations

1. Standardise disclosure format to support comparability across the industry and year-on-year tracking.
2. Consolidate TCFD disclosures and include them in annual reports to support investor reviews, or provide a link in annual reports to the relevant document. Where disclosures are integrated into existing reporting structures or other frameworks such as the Global Reporting Initiative (GRI), it is useful to provide a map of relevant sections against the TCFD framework to assist in reviews of information.
3. Provide a high-level roadmap of the organisation's climate plan with a summary of current achievements and a view of key next steps towards the TCFD guidance.
4. Audit environmental data through a third party to certify its accuracy and increase market confidence in the information shared.

Smaller organisations, less-mature disclosers

Smaller organisations that tend to be less mature in their disclosures can take valuable steps to embed the TCFD framework following an approach that is proportional to their business. We believe that there needs to be a focus on setting the **‘tone from the top’** in these organisations, placing an emphasis on **board engagement**, setting **clearly defined governance structures**, and **building expertise of senior executives**. To effectively embed risk management within the organisation, we advise that organisations **review existing risk appetite**

statements to ensure that climate risk is adequately incorporated, and, as a starting point, **conduct climate exposure analysis** on existing portfolios to identify where there are material risks. We recommend a **policy review** in line with overall climate strategy. To drive initiatives at pace, we encourage organisations to **collaborate with external parties** to leverage existing knowledge and learning on TCFD implementation, particularly around scenario analysis.

Pillar	Recommendations for less-mature disclosers	Example
Governance	Clearly define governance structures for management and escalation of climate-related matters.	Conduct a review of existing risk management governance framework to establish how best to embed climate in the firm.
	Describe the key executive responsibilities in relation to climate management and provide evidence of key decisions and actions taken.	Establish an accountable executive for climate risk, define associated responsibilities, and document decisions through appropriate governance forums.
	Conduct training for the board and senior management (executives) on climate-related issues to increase knowledge and set the agenda for the organisation to implement capability effectively.	Identify knowledge gaps, introduce appropriate training for key senior stakeholders, and measure progress.
Strategy	In line with TCFD guidance, identify short-, medium-, and long-term time horizons; the rationale for these; and the climate risks and opportunities associated with each horizon.	Conduct climate sector analysis to identify and measure an initial view of potential climate risk exposure in the portfolio. Identify key climate risk drivers for the bank across different time horizons and the rationale underpinning the selection of these. Complete strategic workshops to determine objectives in relation to climate management and agree key aspirations of the business in green financing and climate action engagement.
	Engage and collaborate with external parties to leverage learnings on climate scenarios.	Utilise existing quantitative frameworks and models such as PACTA to get a start on scenario analysis. Leverage third party expertise to support capability development.
	Review current policies and align to climate goals.	Based on initial risk assessment and strategic objectives, amend existing policies to reflect the defined climate risk management approach.

Pillar	Recommendations for less-mature disclosers	Example
Risk Management	Ensure the risk appetite statement for the organisation embeds climate risk considerations.	Develop and enhance existing quantitative and qualitative risk appetite statements in relation to climate based on the key risks identified, strategic planning considerations, and initial stress testing results.
	Integrate climate risk into the wider enterprise risk framework.	Assess how climate risk can be embedded in existing risk management processes for traditional risk types (e.g. credit, market, liquidity, operational), agree and document key responsibilities in relevant processes and risk framework documentation.
Metrics and Targets	Identify which metrics recommended by the TCFD guidance are most relevant for the organisation.	Review TCFD guidance, industry guidance, and peer metrics against current business model to determine priority metrics.
	Ensure metrics and targets have a clear objective and are linked to a specific plan or element of the roadmap.	Initiate a metrics review and optimisation project to ensure climate-related targets are defined and integrated in governance reviews. Develop a plan for metric enhancements based on priorities of the organisation and current data sourcing limitations.
	Disclose the methodology used to define and calculate climate-related metrics.	If there are data or methodology limitations, disclose relevant assumptions in all metrics calculated and reported.

Larger organisations, more-mature disclosers

Larger organisations that tend to be more mature still have areas in which they can enhance their capabilities to manage climate-related risks and opportunities. We believe that the emphasis should be placed on **‘setting the standard’** across the industry in key areas such as metrics and target development, scenario analysis, and climate or green taxonomies. Larger organisations play a major role in shaping industry norms, so creating clarity across the industry in these areas will pay dividends in the future as investors seek

more transparency to make business decisions. Within the organisation, we advise prioritising **aligning incentives to climate performance** and increasing the ability to **measure risk more accurately** within portfolios. We encourage **further alignment of strategy to international climate targets**, as well as **establishing stronger policies** that direct capital flows to activities that promote the transition to a low-carbon economy, and away from activities that do harm.

Pillar	Recommendations for more-mature disclosers	Example
Governance	Reference examples of the climate-related metrics and targets that are being reviewed by the board and senior management.	Include in disclosures examples of dashboards that are used in risk monitoring processes and governance forums.
	Review remuneration policies of the board and senior management to incorporate management of climate-related issues – and disclose how this is administered.	Link performance against climate-related objectives to the variable remuneration of executives and board. Disclose how performance objectives account for climate.

Pillar	Recommendations for more-mature disclosers	Example
Governance	Drive climate strategy by cultivating climate expertise among board members through upskilling, career progression, and recruitment.	Define minimum board training requirements, implement extensive training for board members, and consider setting a target for the proportion of the board with climate expertise.
	Detail how the business strategy aligns with Paris Agreement or net zero goals and articulate plans to support this transition.	Complete strategic planning to define how portfolios will be adjusted to align with decarbonisation pathways, defining associated timelines for change. Refine position statements in relation to climate-sensitive activities and sectors and benchmark current policies against peers.
Strategy	Assess and disclose the financial impact of climate-related issues for individual business lines and geographies.	Complete detailed assessment of physical and transition risk exposure against existing business model, considering all material counterparty exposures and all material sector-level exposures. Define potential financial impacts across key business metrics and detail plans to minimise risks where applicable. Define a phased approach to gradually enhance data granularity, collection methodologies, and limitations.
	Consider and simulate severe scenarios such as a 3- and 4-degree temperature rise. Disclose results of stress testing.	Disclose severe scenario results, impact on financials, and any resulting changes to strategy. Define and disclose relevant management actions under various scenarios as with standard stress tests.
	Introduce training across the organisation to shape climate risk management culture.	Create a curriculum for all three lines of defence (including relationship managers) on climate risk management.
	Disclose key controls that are utilised to manage climate risk in line with strategy and risk appetite.	Integrate climate considerations in client-level, sector-level, and third-party risk assessments, including early warning indicators, rating models, covenant management, Risk and Control Self Assessments (RCSAs), and event management. Integrate climate in the operational resilience framework.
Risk Management	Engage with clients in an advisory capacity to develop their climate strategy and to enhance counterparty data gaps.	Introduce client questionnaires to identify counterparty risks and assess clients' response to climate change.
	Provide evidence of transaction reviews and tools used to measure and monitor climate risk.	Collate and disclose the number of transactions subjected to enhanced climate-related due diligence checks during the financial period, including details of the number of transactions approved, rejected, etc.

Pillar	Recommendations for more-mature disclosers	Example
Metrics and Targets	Collaborate with external parties to shape the development of climate metrics and deepen understanding of the impacts of financing activities.	Partner with third-party data providers to assess the data landscape, identify gaps, and develop solutions. Engage in consultations and piloting of scope 3 financing metrics development.
	Engage in the development of climate or green taxonomies to help shape strategy development and standardisation across the industry.	Engage in consultations and piloting of industry taxonomy development. Launch an internal initiative to look at data enhancements to support more-accurate sector and activity mapping within the portfolio.

As evidenced in this report, significant disclosure progress has been made over the past year as climate change has rapidly become a key area of focus in the sector. The recent regulatory announcements across several jurisdictions provide further indication that the TCFD framework will become a global standard for climate reporting.

As a responsible business, committed to helping tackle the challenges of climate change through our work and the way we run our organisation, we at BCS Consulting hope this report will support banks to develop and deliver their climate strategy and future TCFD disclosures.

For more information about our suite of services supporting clients on their sustainable finance transformation journey, please visit our website, bcsconsulting.com or contact Hector.Fontaine@bcsconsulting.com

4. Helping Financial Institutions Tackle Environmental, Social and Governance Challenges

Harness the Power of Sustainable Finance.



Time to act

Given that climate change poses an existential threat to society, the most pressing question must surely be, 'How do we tackle it effectively?' An important first step for individual businesses is to assess how they are shaping up to address climate-related risks and opportunities in their organisation. Arguably, there is nowhere that this is more important than in the financial services industry, which is recognised as the key enabler of society's sustainable transformation.

Experts in sustainable finance, BCS Consulting works exclusively with financial services providers helping them to understand and address the increased regulation and disclosure requirements necessary in the face of growing climate and sustainability risks. Our experience helping clients stand up to stakeholder scrutiny and meet regulatory demands enables us to deliver more resilient, stronger business in the process.

“It’s now time for systemic and seismic changes to business models – a whole-economy change, every industry and every company.”

Mark Carney, UN Special Envoy for Climate and Finance



Support Where You Need it

As well as understanding the impact of risk on business, we also help clients seize the new opportunities that change inevitably brings with it through our portfolio of ESG services.

Capability/Maturity Diagnostic

We identify and prioritise areas of enhancement for ESG and climate change capability, taking into consideration an organisation's strengths, weaknesses, current best practice, business appetite, and data maturity.

Senior Management ESG Training and Awareness

Our training supports effective senior management oversight and strategic planning, highlighting industry trends and taking into consideration the business model of the organisation.

Governance Review

We can quickly establish effective governance to monitor ESG and climate-related opportunities and risks.

Climate Scenario Analysis

We complete effective assessments of climate risk exposure in the portfolio to support financial planning, asset allocation, and regulatory compliance.

Risk Management Framework

We support organisations to define adequate mechanisms for climate and ESG risk appetite, risk identification, monitoring, and management.

MI and Business Performance

We support the enhancement and implementation of metrics and targets to measure and manage ESG and climate-related performance.

External Disclosures Improvement

We identify areas of focus to enhance external disclosures in a cost- and time-effective way, including ESG reporting and adequate disclosure in frameworks such as TCFD.

Our projects include:

- TCFD reporting and capability development advisory
- Climate Risk Framework development
- Climate Regulatory Impact Assessments and compliance advisory
- Senior Management Climate and ESG training
- Climate Risk Portfolio Analysis
- Sustainable Finance strategy and targets development
- ESG reporting and stewardship reporting
- ESG regulatory readiness review

5. Annexes

a. TCFD Background

Overview and purpose

The Task Force on Climate-related Financial Disclosures (TCFD) was formed by the Financial Stability Board (FSB) in December 2015 in response to a request from the G20 countries to better understand the financial risks posed by climate change. The main objective of the TCFD is to develop consistent climate-related financial disclosures to help investors, lenders, and insurance underwriters improve their understanding and analysis of climate-related risks and opportunities.

The voluntary recommendations set out by the TCFD have been designed to assist companies in identifying and disclosing the potential financial impacts of climate-related risks and opportunities. The final recommendations were issued in June 2017.

TCFD framework structure

The TCFD structured its recommendations, which transcend sectors and jurisdictions, around four key areas: Governance, Strategy, Risk Management, and Metrics and Targets. An overview of the framework is detailed below.²⁵

Governance	Strategy	Risk Management	Metrics and Targets
<p>Disclose the organisation's governance around climate-related risks and opportunities.</p> <p>Recommended Disclosures:</p> <ol style="list-style-type: none"> 1. Describe management's role in assessing and managing climate-related risks and opportunities. 2. Describe the board's oversight of climate-related risks and opportunities. 	<p>Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning where such information is material.</p> <p>Recommended Disclosures:</p> <ol style="list-style-type: none"> 3. Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long terms. 4. Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning. 5. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario. 	<p>Disclose how the organisation identifies, assesses and manages climate-related risks.</p> <p>Recommended Disclosures:</p> <ol style="list-style-type: none"> 6. Describe organisation's processes for identifying and assessing climate-related risks. 7. Describe the organisation's processes for managing climate-related risks. 8. Describe how processes for identifying, assessing, managing climate-related risks are integrated into the organisation's overall risk management. 	<p>Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.</p> <p>Recommended Disclosures:</p> <ol style="list-style-type: none"> 9. Disclose Scope 1, Scope 2, and, if appropriate Scope 3 greenhouse gas (GHG) emissions, and the related risks. 10. Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process. 11. Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.

²⁵ See Implementing the Recommendations of the TCFD (TCFD, 2017) for a full list of guidelines to implement the recommendations.

Governance	Strategy	Risk Management	Metrics and Targets
Complementary guidance for the banking sector (summary view)			
<ul style="list-style-type: none"> Banks should describe processes and frequency by which the board and/or board committees are informed about climate-related issues. Banks should describe how the board monitors and oversees progress against goals and targets for addressing climate-related issues. 	<ul style="list-style-type: none"> Banks should describe significant concentrations of credit exposure to carbon-related assets. Banks should consider disclosing climate-related risks (transitional and physical) in lending and other financial intermediary business activities. 	<ul style="list-style-type: none"> Banks should consider characterising their climate-related risks in the context of traditional banking industry risk categories such as credit risk, market risk, liquidity risk, operational risk. Banks should consider describing any risk classification frameworks used. 	<ul style="list-style-type: none"> Banks should provide the amount and percentage of carbon-related assets relative to total assets, the amount of lending and other financing connected with climate-related opportunities. Banks should provide metrics to assess the impact of climate-related risks on their financing activities, considering industry, geography, credit quality and average tenor.

b. Key Terms of Reference

Organisation	Description
2° Investing Initiative (2DII)	The 2° Investing Initiative (2DII) is an international, non-profit think tank working to align financial markets and regulations with the Paris Agreement goals. (2°Investing Initiative, 2020).
Carbon Metrics	<p>Examples include:</p> <p>Weighted Average Carbon Intensity – Portfolio's exposure to carbon-intensive companies, expressed in tons CO₂e / USDM revenue.</p> <p>Carbon Emissions – The absolute greenhouse gas emissions associated with a portfolio, expressed in tons CO₂e.</p> <p>Carbon Footprint – Total carbon emissions for a portfolio normalised by the market value of the portfolio, expressed in tons CO₂e / USDM invested.</p> <p>Carbon Intensity – Volume of carbon emissions per million dollars of revenue (carbon efficiency of a portfolio), expressed in tons CO₂e / USDM revenue.</p> <p>Exposure to Carbon Related Assets – The amount or percentage of carbon-related assets in the portfolio, expressed in USDM or percentage of the current portfolio value (TCFD 2017).</p>
Climate Action 100+	Investor initiative launched in 2017 with over 360 investors with collective management of over USD 34 trillion in assets. The initiative aims to ensure greenhouse gas emitters take action on climate change (Climate Action 100+, 2019).
Equator Principles	Risk management framework which has been adopted by 97 financial institutions for managing environmental and social risks in projects with the intention to provide a minimum standard for due diligence and monitoring (Equator Principles, 2019).
EU Green Bond Standard (EU GBS)	In Action 2 of the 2018 European Commission Action Plan on Financing Sustainable Growth, the EC committed to creating standards and labels for green financial products. The EU GBS determines whether any type of listed or unlisted bond or capital market debt instrument issued by a European or international issuer qualifies as an EU Green Bond (European Commission, 2020).
EU Taxonomy	The EU Taxonomy is a classification system that determines whether an economic activity is environmentally sustainable (European Commission, 2020).
Green Bond Principles	The Green Bond Principles promote integrity in the Green Bond market through guidelines that recommend transparency, disclosure, and reporting (ICMA Group, 2018).

Organisation	Description
Green Loan Principles	The Green Loan Principles provide voluntary recommended guidelines for the underlying characteristics of a transaction to clarify the instances in which a loan can be categorised as 'green' (Loan Market Association, 2019).
Greenhouse Gas Protocol	The Greenhouse Gas Protocol provides a global standardised framework to measure and manage greenhouse gas (GHG) emissions (GHG Protocol, 2020).
Network for Greening the Financial System	A group of central banks and supervisors launched at the Paris One Planet Summit 2017, who, on a voluntary basis, share best practices, contribute to the development of environment and climate risk management in the financial sector, and mobilise mainstream finance to support the transition towards a sustainable economy (NGFS, 2019).
Paris Agreement Capital Transition Assessment (PACTA)	PACTA provides a methodology for governments and financial institutions to test the climate compatibility of their investments by measuring and aligning financial flows with the Paris Agreement's 1.5°C goal. The first assessments began in 2020 following a 2017 pilot project run by the 2° Investing Initiative and the Swiss government (PACTA, 2020).
Paris Climate Agreement	United Nations Framework Convention on Climate Change. This landmark agreement has been adopted by 195 countries since 2016 to combat climate change via the central aim of keeping global temperature rise below 2 degrees Celsius above pre-industrial levels (UNFCCC, 2017).
Partnership for Carbon Accounting Financials (PCAF)	Created in 2015, PCAF is a global partnership of financial institutions that aims to develop a standardised approach to assessing and disclosing GHG emissions of loans and investments to support alignment of portfolios with the Paris Climate Agreement (PCAF, 2020).
PRA Supervisory Statement SS3/19	PRA supervisory statement setting out expectations for banks and insurers to identify and manage financial risks from climate change (Bank of England, 2019).
PRA Climate Biennial Exploratory Scenario	The BES is the part of the bank's stress testing framework used to explore less well-understood risks that are not neatly linked to the financial cycle. In 2021, this will explore the financial risks posed by climate change using three climate scenarios: early, late, and no additional policy action (Bank of England, 2019).
Principles for Responsible Investment (PRI)	PRI has been supported by the United Nations since 2005. It provides a voluntary set of six investment principles to incorporate ESG into investment practices (Principles of Responsible Investment, 2019).
Science Based Targets initiative	An initiative that champions science-based target setting as a powerful way of boosting companies' competitive advantage in the transition to a low-carbon economy. The initiative showcases companies that set science-based targets, defines and promotes best practice in science-based target setting, offers resources to reduce barriers to adoption, and independently assesses and approves companies' targets (Science Based Targets, 2019).
Sustainable Development Goals (SDGs)	Seventeen global goals led by the United Nations Development Programme and adopted by all United Nations Member States in 2015. They provide a blueprint for a better and sustainable planet by 2030 (UN Sustainable Development Goals, 2019).
UK joint regulator and government TCFD Taskforce	In the 2019 Green Finance Strategy, the UK government established a Taskforce chaired by HMT and made up of regulators and government departments, to explore the most effective approach to implementing the recommendations of the TCFD (HM Treasury, 2020).
United Nations Environment Programme Finance Initiative (UNEP FI)	UNEP FI is a partnership between the United Nations Environment Programme and the global financial sector to mobilise private sector finance for sustainable development. The frameworks UNEP FI has established or co-created include: Principles for Responsible Banking, Principles for Responsible Investment (UNEP FI, 2019).

Please visit www.bcsconsulting.com/TCFD2020 for full list of references and data sources.

c. Best Practice – TCFD Illustrations

Governance

Standard Chartered governance disclosure excerpt (source, page 6-7)²⁶

4. Governance Pillar

Recognising the impact and complexities of climate change, in 2017 we designated it as a Principal Uncertainty within our Enterprise Risk Management Framework (ERMF). We are integrating climate risk further into our ERMF, recognising its importance and relevance to our business model and the communities and clients we serve.

The Board approved a Climate Risk Appetite Statement in November 2019: *“The Group aims to measure and manage financial and non-financial risks from climate change, and reduce the emissions related to our own activities and those related to the financing of clients in alignment with the Paris Agreement”*.

Under the PRA’s Supervisory Statement 3/19 “Enhancing banks’ and insurers’ approaches to managing the financial risks from climate change”,¹ we are required to assign responsibility for managing the risks arising from climate change to an appropriate Senior Management Function (SMF) under the Senior Managers Regime (SMR). We have assigned relevant SMF responsibilities to our Group Chief Risk Officer; this is consistent with responsibilities for other mainstream financial risks.

Our **Group Chief Risk Officer** is supported in his responsibilities as follows:

Global Head, Enterprise Risk Management (GH, ERM): centrally responsible for second line of defence activities for climate risk, which currently includes development and implementation of a Group-wide climate risk framework. The GH, ERM aids the Group Chief Risk Officer with day-to-day oversight of the risk and line management of the Climate Risk Team.

Climate Risk Team: We have built a central climate risk team within Enterprise Risk Management, with dedicated focus on climate risk management. Given the cross-cutting nature of climate risk and its far-reaching depth, the central team works very closely with various other risk specialists and business areas.

Climate Risk Management Forum: To support the Group Chief Risk Officer in discharging his SMF responsibility, we have established a Climate Risk Management Forum. The Forum consists of senior business, risk and strategy leaders and is tasked with overseeing the development and implementation of the climate risk framework.

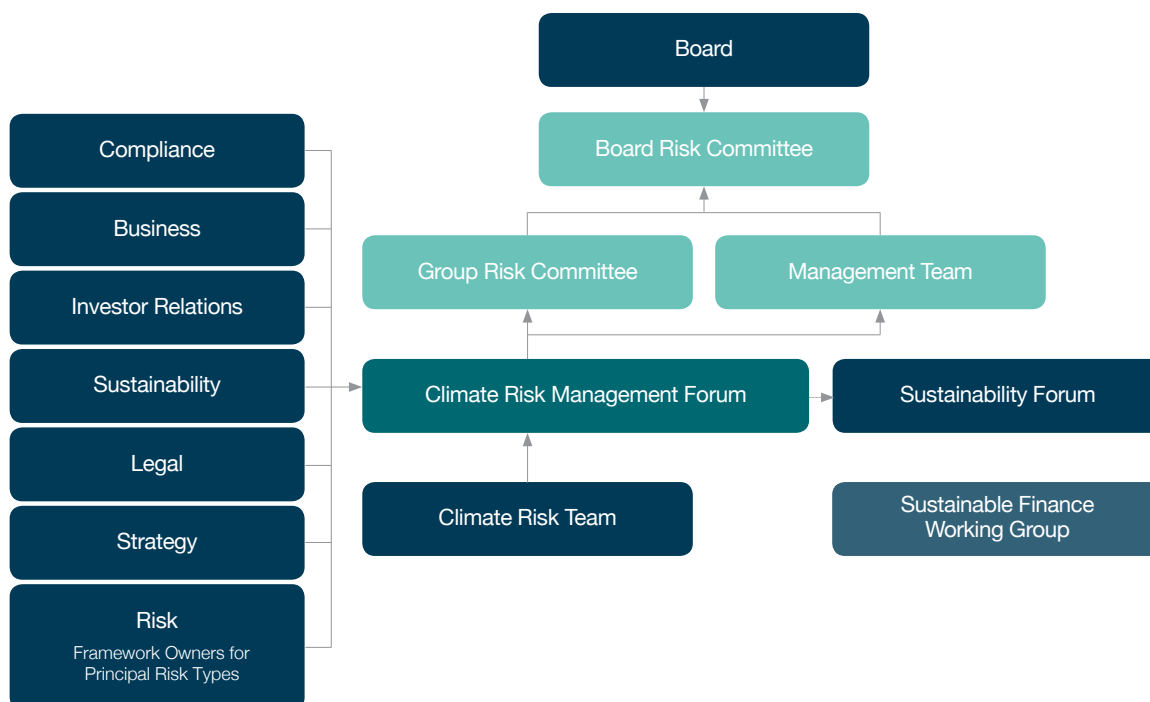


Figure 2: Climate Risk and Opportunity Governance Structure

¹ <https://www.bankofengland.co.uk/prudential-regulation/publication/2019/enhancing-banks-and-insurers-approaches-to-managing-the-financial-risks-from-climate-change-ss>

²⁶ For the latest view of Standard Chartered Governance see [Standard Chartered TCFD 2020 Facilitating climate action where it matters most](#), published February 2021.

The **Group Risk Committee** (GRC) receives quarterly updates on the Group's progress in climate risk management.

Our **Board** has a diverse range of experience and backgrounds, and Board members may have prior exposure to climate change and climate risk themes in other organisations.

The **Board Risk Committee** (BRC) receives biannual updates on climate risk.

We are delivering dedicated training sessions to various business segments and functions across all three lines of defence, and initial training has been provided to the whole Board in September 2019. Our climate risk workplan was presented to the BRC and the Board as part of this training.

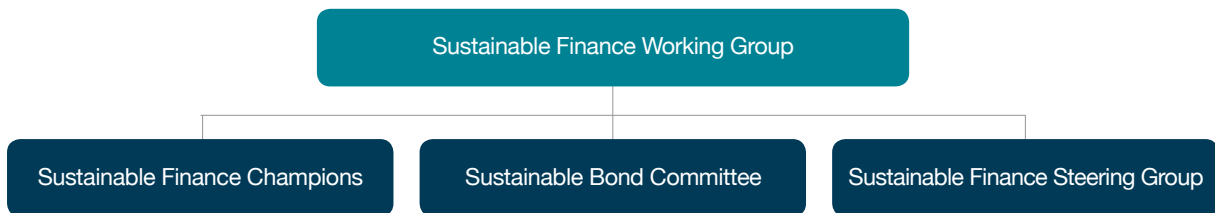
We periodically update our Committee Terms of Reference and will amend these in line with our treatment of climate risk in our Enterprise Risk Management Framework during the next update cycle.



“Standard Chartered has been one of the banks at the forefront of key UNEP FI initiatives on climate change and sustainable development in 2019. It has been one of the Founding Signatories of the Principles for Responsible Banking, joined the banking-industry’s most far-reaching commitment to align with global climate goals and contributed significantly to UNEP FI’s second TCFD pilot this year. Through its leadership, Standard Chartered has helped drive the change towards a sustainable banking industry, promote ambitious global standards and build capacity in many parts of the world.”

Simone Dettling - Banking Team Lead, UNEP-FI

We also have a governance structure, based around our **Sustainable Finance Working Group**, which oversees our response to sustainable finance including climate finance opportunities:



Société Générale climate-related organogram (source page 17)

BOARD OF DIRECTORS

Approves and monitors the CSR strategy (including climate)

GENERAL MANAGEMENT

Submits the CSR strategy to the BoD and oversees its implementation

**Responsibility Commitment
Committee (CORESP)**

Manages the strategic decisions on E&S materiality

Risk Committee (CORISQ)

Defines the risk appetite on portfolios sensitive to climate (financial materiality)

E&S RISK MANAGEMENT FRAMEWORK

Formalised into Société Générale's normative documentation

E&S sector policies & implementation

Framework for managing environmental & social materiality and financing materiality

Climate credit risk framework

Framework for managing financing materiality (transition and physical risks)

BUSINESS AND SERVICE UNIT

CSR strategy (including climate strategy) is declined in the roadmaps of each Business and Service units
All Business / Service units are responsible for its deployment (LOD1)

Global Banking Solutions

A dedicated offering of sustainable finance solutions and products to clients

Risks and Compliance

LOD2 for E&S risks and impact including climate related risks

Other business & service units

Investor relations, PR, purchasing, etc.

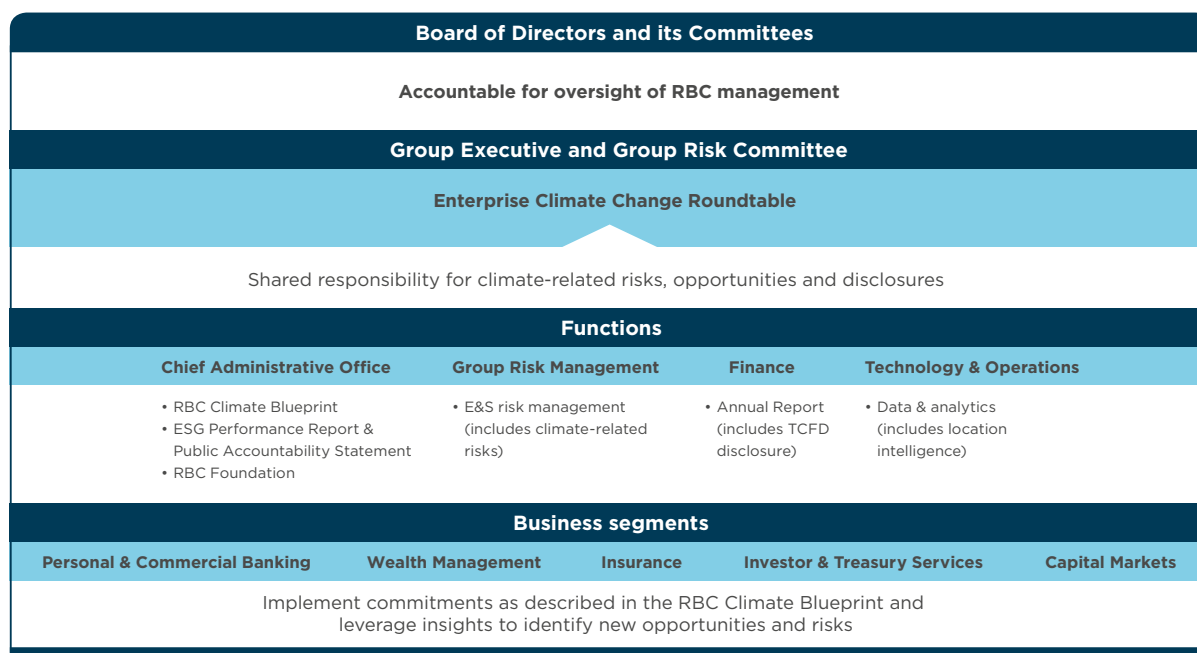
CSR Proposes and deploys the CSR strategy

Audit
(LOD3)

Royal Bank of Canada climate-related organogram (source page 4)

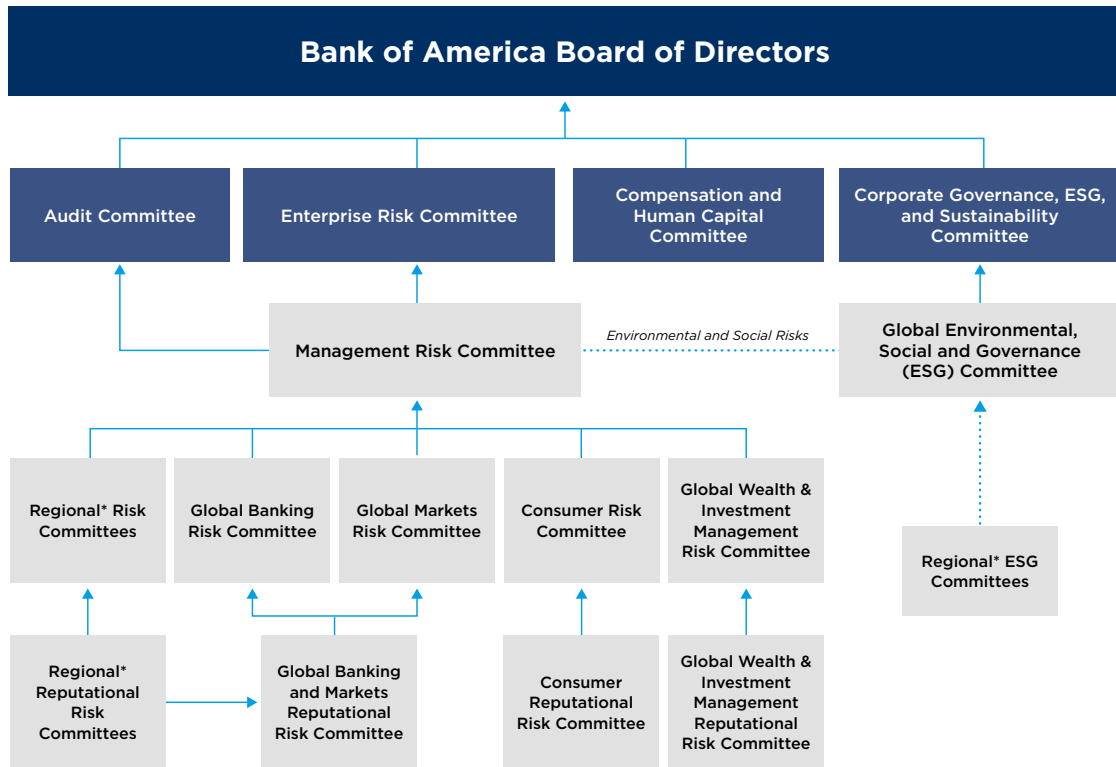
Management oversight

Our approach to climate change is coordinated at an enterprise level with the functions and business segments sharing responsibility for addressing climate-related risks and opportunities. In 2019, RBC formed an enterprise climate change roundtable to oversee the coordination of our approach to climate change across the Bank. In 2019, the roundtable met semi-annually and membership included senior management representatives from across the functions and business segments.



Bank of America climate-related organogram (source page 19)

Figure 10: CEO, Board of Directors and Management Level Oversight



* Regional committees are established to address matters in Asia Pacific, Latin America, European Union, United Kingdom, Central and Eastern Europe, Middle East and Africa

Mizuho governance Disclosure: corporate governance initiatives completed in financial year 2019 (source page 12)

Description	Frequency	Business execution line		Supervisory line	
		Risk Management Committee	Executive Management Committee	Risk Committee	Board of Directors
Establishment of Environmental Policy to strengthen environmental initiatives	—	✓	✓	✓	✓
Status of response to TCFD Recommendations	Annually	✓	✓	✓	✓
Review of management system for responsible investment, financing, and other services	Annually	✓	✓	✓	✓
Risk appetite policy	Annually	✓	✓	✓	✓
Our management of top risks	Quarterly	✓	✓	✓	✓
Revision of the fundamental approach to sustainability initiatives	—		✓		✓
FY2020 business plan (including key sustainability areas, initiative planning, and targets)	Annually		✓		✓

Strategy

Société Générale climate materiality assessment overview (source page 8)

2.1. Société Générale's climate materiality at a glance

Société Générale is one of the leading European financial services groups. Active in the real economy since 1864 with a solid position in Europe and connected to the rest of the world. Société Générale employs over 138,000 members of staff in 62 countries and supports 29 million individual clients, businesses and institutional investors.

The Group's activities in relation to climate change can be thought of in terms of direct materiality (climate-related risks and impact that are owned or controlled by the Group) and indirect materiality (risks and impact that are a consequence of the Group's activities but occur at sources owned or controlled by its clients) as shown in Figure 3.

Figure 3: Overview of Societe Generale's main activities in relationship to climate materiality (URD 202010)

Figure 3: Overview of Société Générale's main activities in relationship to climate materiality (URD 2020)

DIRECT MATERIALITY

Own operations

Building (3.6 million m²) Transport (423 million km) Electricity (688 GWh) Waste (14,635 tonne) Water (1,54 million m³) Paper (8978 tonne) IT Infrastructure

Real estate development

3161 dwellings delivered [SOGEPROM]

Leasing

Automotive [ALD] (1.66 million vehicles)
Equipment [SGEF]

INDIRECT MATERIALITY

Financing activities (EUR 918 billion of Exposure at Default)

Corporates (33%) Sovereign (23%)
Retail (22%) Institutions (12%) Others (10%)

Investment activities (EUR 360 billion of Asset Under Management)

Insurance [Sogecap] (26%) Private Banking (33%)
Investment management, ETF and indexing [Lyxor] (41%)

Market and investor services

Fixed income and currencies, advisory services, payments, equity & security services have indirect materiality through the activities of clients

Supply chain

~EUR 6 billion purchases

Barclays climate risk identification and materiality assessment overview
(source page 51)²⁷

Managing climate-related risks

Risks arising from climate change materialise through various channels:

1) through the financial services and support we provide to customers who may themselves be exposed to the risks of climate change;

2) the operation of our own infrastructure, business and premises which may be exposed to both transition and physical risk; and

3) through a deteriorated perception of Barclays if we do not adequately support a transition away from high-carbon activities and consequent loss of our social licence to operate.

We broadly categorise climate risks into one of the following – transition risk, physical risk and connected risk. Within these broad categories we identify a number of factors arising from climate change which we monitor over the short, medium and long-term.

Transition Risk	Physical Risk
<p>The transition to a lower carbon economy will involve significant rapid policy, regulatory and legal changes, as evolving technology and markets adapt to a changing climate and associated impacts.</p> <p>Changing public sentiment may lead to scrutiny of the business activity, leading to reputational damage.</p> <p>Over time, campaign and other groups may decide to take legal action against entities perceived to be contributing to climate change.</p>	<p>Physical risks resulting from a changing climate can be event driven (acute risks), including increased severity of extreme weather events such as cyclones, hurricanes and flood.</p> <p>Longer term shifts in climate patterns (chronic risks) arise from sustained higher temperatures that may cause rises in sea levels, rising mean temperatures and more severe weather events.</p> <p>Potential impacts on GDP, unemployment, food prices, inflation, insurance costs, asset prices and profitability of sectors. Physical damage could result in higher costs and impair asset values.</p>

Connected Risk

Connected Risk is the second-order risk arising from physical or transition risk impacts. Connected risk is diverse, impacting consumer and wholesale portfolios. These could be household affordability or recessionary pressures from the rise in credit defaults and sector profitability arising from transition and physical risk.

When considering climate-related risks, Barclays has categorised short, medium and long term to mean the following timescales:

Short Term 0–1 Years S	Medium Term 1–5 Years M	Long Term 5–30 Years L
---	--	---

Examples of climate transition risks	Examples of climate physical risks
<p>Regulatory Risk S M L</p> <ul style="list-style-type: none"> Rapid policy or regulatory changes (e.g. carbon taxes, tightening of efficiency standards) could lead to increased credit risk associated with clients and counterparties. Widespread and significant policy changes have not yet occurred but remain a risk now and in the future. 	<p>Acute Physical Risk (event-driven) S M L</p> <ul style="list-style-type: none"> This could lead to credit and market risks associated with counterparties and clients. The bank’s own operational resilience will mitigate against business disruption and damage to assets. Acute physical events are already occurring in the short term but will likely continue and become more widespread.
<p>Technology Risk S M L</p> <ul style="list-style-type: none"> New evolving and disruptive technologies could lead to substantial and rapid changes in costs of production and operation, competitiveness, supply and demand in certain sectors – which could impact on credit risk associated with clients and counterparties. The risk of this occurring exists now and in the future. 	
<p>Legal Risk S M L</p> <ul style="list-style-type: none"> Clients could face potential litigation as a result of the environmental impact of their business activities or their approach to addressing climate change, which could lead to credit risk for the bank where we have exposure to them. There is some evidence that this is an emerging risk which could continue into the future. 	
	<p>Chronic Physical Risk (shifts) M L</p> <ul style="list-style-type: none"> These risks could impact on entire sectors and geographic regions that the bank supports, as well as potentially impacting on the bank’s own infrastructure. These shifts in climate pattern are expected to manifest in the longer-term.

27 For the latest view of Barclays Risk Management see [Barclays PLC Climate-related Financial Disclosures 2020](#), published 31 December 2020.

BNP Paribas climate risks and opportunities identification and materiality assessment overview (source page 27)

Summary of impacts of the main climate-related risks and opportunities for BNP Paribas

The main climate-related risks and opportunities for BNP Paribas are listed in the following two tables.

An indication of when each risk or opportunity is liable to fully materialise is given: short-term (ST, i.e. within the year), medium term (MT, i.e. between two and five years) or long term (LT, i.e. after five years). The potential significance of each risk and opportunity is also estimated, ranging from + (moderately significant) to ++++ (very significant).

Risk category	Scope	Risk factor	Time frame	Potential significance of impact (for the Group)
Transition risks	Within BNP Paribas' of scope operations	Rise in carbon price (tax or quotas) applied to BNP Paribas' GHG emissions on its operational scope	MT	+
		Tighter regulations on climate reporting, which would require more time-consuming reporting tools/processes and more resources	ST	+
		Tougher environmental standards (e.g. on the energy efficiency of Group buildings, on our company car fleet, etc.) liable to call for additional investments	MT	+
	Risks for clients	Credit risk: Rise in carbon price (tax or quotas) applied to client GHG emissions, especially for clients with high GHG emissions (e.g. coal-fired power plants, heavy industry, etc.)	MT	+++
	Risks FOR BNP Paribas	Risks of loss of market share for the Group, and in particular for its subsidiaries Arval and Leasing Solutions if these do not adapt sufficiently to the demand of their customers for more environmental products and services (electric vehicles, leasing of low-carbon equipment, etc.)	MT	++
		Reputational risk: Risk of an adverse impact on BNP Paribas' brand image if external counterparties feel the Group is not contributing actively enough to the fight against climate change (e.g. being criticised by advocacy NGOs regarding energy sector finance policies)	ST	+/+++
Physical risks	Risks for clients	Weather changes, including in the water cycle, disrupting the production processes of some clients, and thus jeopardising their income (e.g. decreased river flows adversely affecting the production of hydropower plants, increase water temperatures adversely affecting the production of nuclear power plants)	MT	+ / ++

Some of the main climate-related risks for BNP Paribas

Scope	Opportunity factor	Time frame	Potential significance of impact (for the Group)
Within scope of operations	Energy renovation of Group buildings (offices, branches, etc.) leading to reduced energy consumption and thus lower power bills	ST	+
Via clients	Revenues generated by supporting corporations that contribute directly to SDGs (sustainable development goals)	ST	++++
	New businesses: green bonds, sustainable bonds, blended finance, green loans, Sustainability Linked Loans, etc.	ST	+++
	Development of low-carbon offers: low-carbon real estate promotion at BNP Paribas Real Estate, climate indices and green funds from BNP Paribas Asset Management, green investments within the general funds of BNP Paribas Cardiff etc.	ST	+ / ++
	Development of low-carbon offers: low-carbon real estate promotion at BNP Paribas Real Estate, climate indices and green funds from BNP Paribas Asset Management, green investments within the general funds of BNP Paribas Cardiff etc.	ST	+ / ++
	Arval's expanded range of electric cars to meet growing demand	MT	+
	Loans (home and consumer) to help households pay for energy renovations on their homes (e.g. green mortgage loans offered by Fortis, special consumer loans offered by Domofinance, BNP Paribas Personal Finance/EDF joint venture specialising in home energy renovations)	ST	++
	Development of the BNP Paribas Leasing Solutions range of more energy efficient and/or less GHG-emitting leasing products	MT	++
	Revenues generated from renewable energy financing	ST	+++
	Revenues generated from carbon credits (Carbon Desks at Global Markets, ClimateSeed)	ST	+
	Loans to start-ups specialising in the energy transition	ST	+

Some of the main climate-related opportunities for BNP Paribas

Barclays Exploratory Climate Stress Testing approach (source page 59)²⁸

Group-wide Exploratory Climate Stress Test 2019

During 2019, Barclays conducted a Group-wide, exploratory stress test against a severe but plausible near-term climate scenario. The aim of the analysis was to identify key vulnerabilities that were most relevant and material to Barclays' business model and geographical footprint.

Our key objective was to understand the vulnerability of the bank should global financial systems experience a significant market shock triggered by sudden policy action on climate change.

The Intergovernmental Panel on Climate Change (IPCC) have adopted four representative concentration pathways (RCP) as part of their goal in providing an objective and scientific view of climate change. These range from a high transition scenario where

global temperatures are contained to 2.3°C (RCP2.6) to a world whereby carbon emissions continue at current rates and temperatures increase beyond 3°C (RCP8.5). The approach to our stress test aligns most closely to the RCP2.6 pathway.

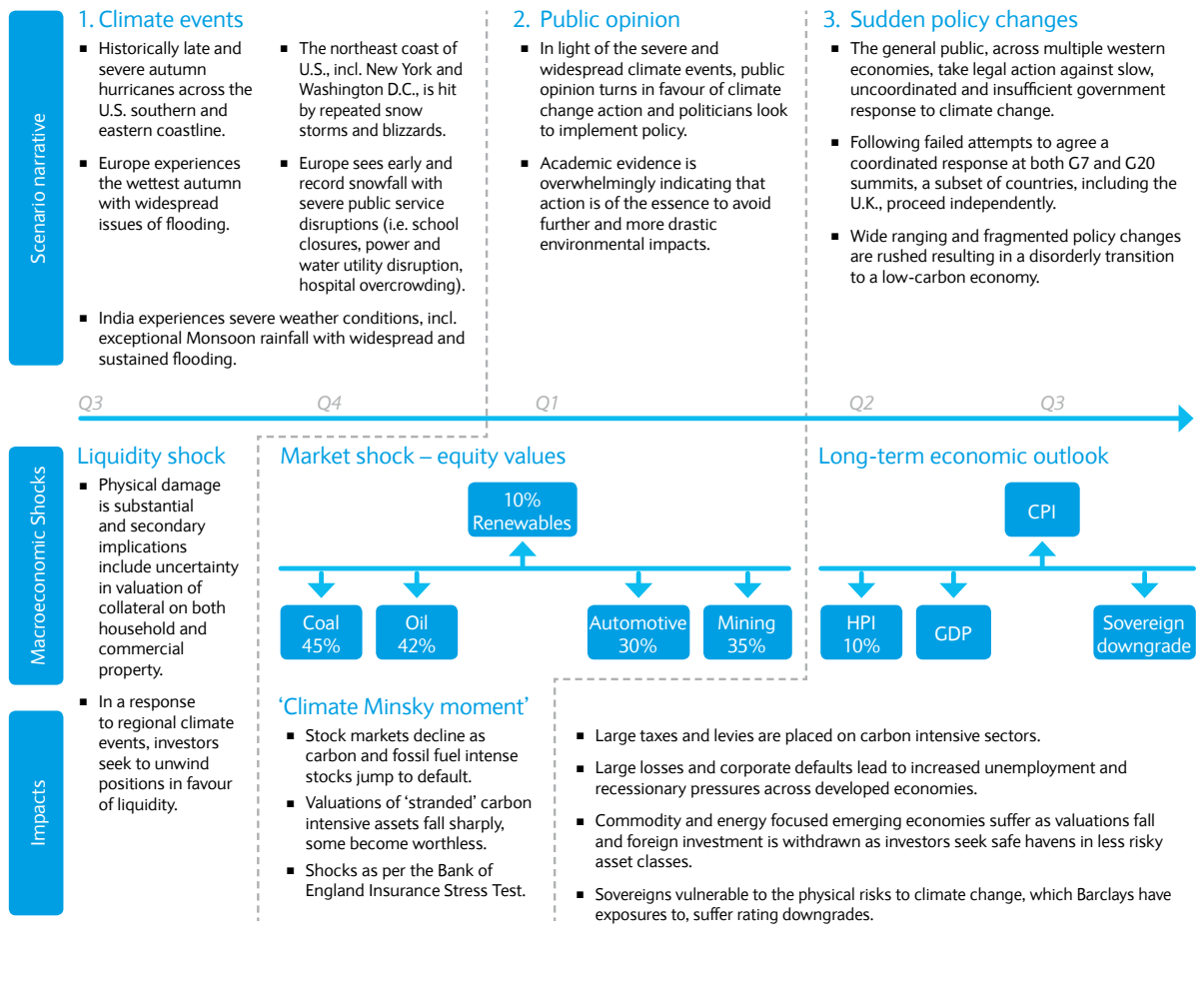
Approach

The approach utilised our existing stress testing capabilities and climate risk framework to help us identify potential vulnerabilities and key areas of focus.

We first designed a three-year scenario which was intended to be severe but plausible in light of the current global political and economic environment. The scenario began in 2019 and evolved over a three-year time horizon.

We then considered how each phase of the scenario could impact Barclays' portfolios and principal risks, including running sensitivity analysis on key assumptions made and on the most impacted areas.

Lastly, we considered each loss event in turn and whether there were any notable second-order feedbacks that could exacerbate losses identified in other areas of the bank.

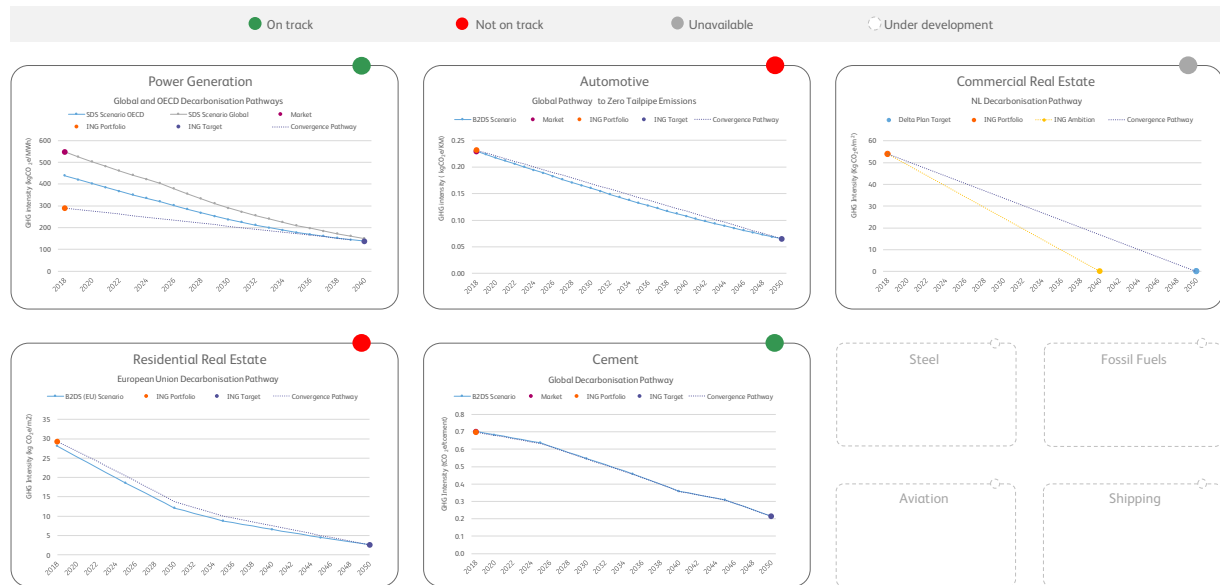


28 For the latest view of Barclays scenario analysis approach see *Barclays PLC Climate-related Financial Disclosures 2020*, published 31 December 2020.

ING Climate Alignment Dashboard (source page 11)

The Climate Alignment Dashboard (CAD)

Portfolio view – Outstandings as of year-end 2018



UBS corporate lending portfolio technology mix of production against global economy (source page 10)

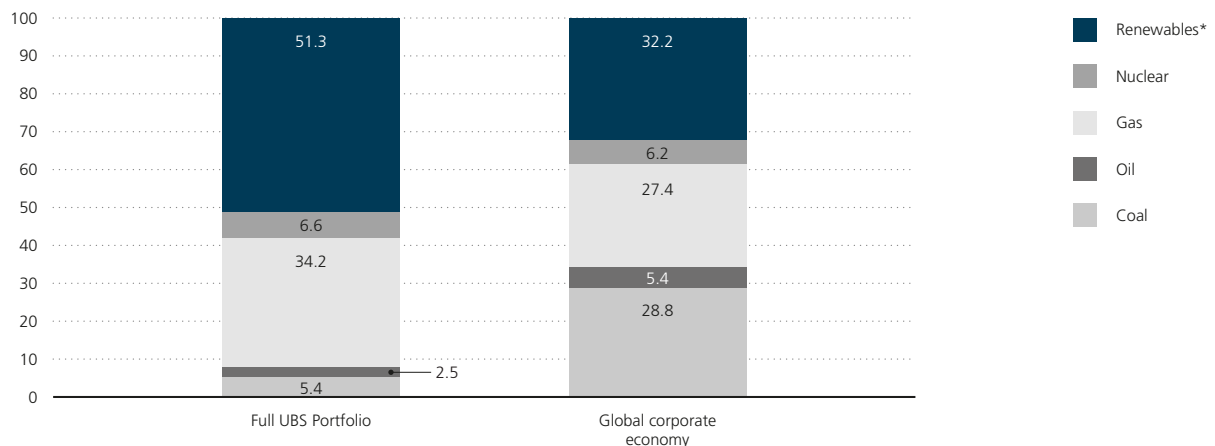
PACTA methodology for power generation:

UBS corporate lending portfolio technology mix of production against global corporate economy

In 2019 we further assessed select climate-sensitive sectors using the PACTA methodology. Results on power sector show that the technology mix of USB’s power sector corporate lending portfolio is significantly less carbon intensive than the global corporate economy, as of 2019.

UBS corporate lending portfolio technology mix of production against global corporate economy

Capacity distribution across technologies
In %



* Renewables, including solar, wind, hydro, biofuels and others.

Risk Management

Macquarie Group Transition Risk Heatmap (source page 16)

FY2020 SCENARIO ANALYSIS | TRANSITION RISK

Heat map extract

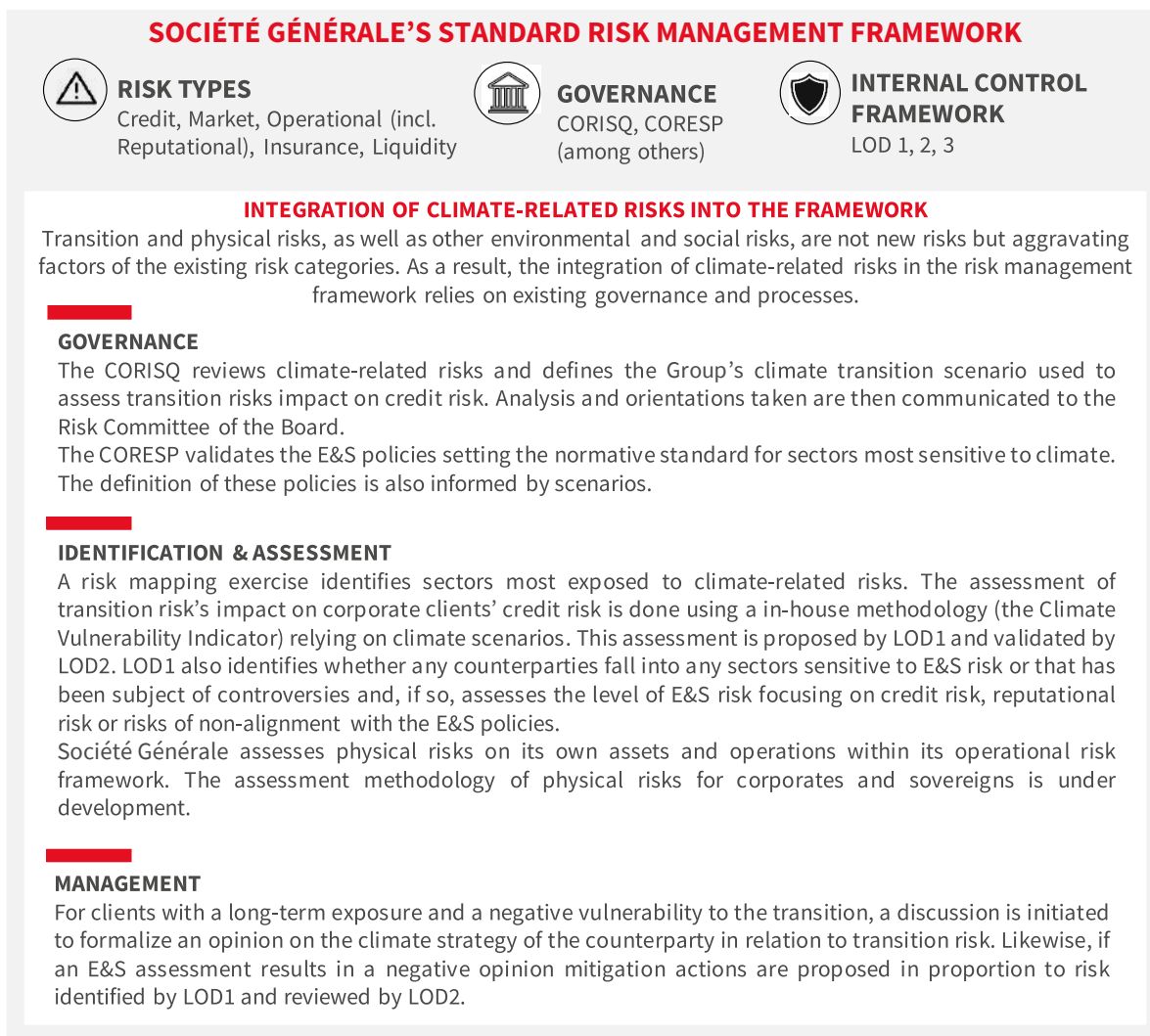
Transition Risk	Orderly Scenario			Disorderly Scenario		
	2025	World 2035	2050	2025	World 2035	2050
Macquarie Sector Groups						
Agriculture						
Consumer Staples (including Food and Beverages)						
Commercial and Professional Services						
Consumer Discretionary						
Consumer Discretionary: Automobiles						
Consumer Discretionary: Automobiles – Electric Vehicles						
Financials						
Health and Education						
Technology and Telecommunications						
Aircraft and Airlines						
Rail Transport						
Road Transport						
Shipping						
Chemicals						
Heavy Building Materials						
Metals and Mining						
Metals and Mining (Green Minerals)						
Coal Mining (Coking)						
Coal Mining (Thermal)						
Gas Exploration and Production						
Oil Exploration and Production						
Capital Goods						
Capital Goods: Renewables Equipment						
Property and Real Estate						
Utilities: Power and Gas						
Utilities: Power Generation – High Carbon						
Utilities: Power Generation – Low Carbon						
Utilities: Water and Sewerage						

Legend – Transition Gradient scale



Société Générale climate risk integration into the standard risk framework assessment overview (source page 23)

Figure 5: Integration of climate-related risks into the standard risk assessment framework

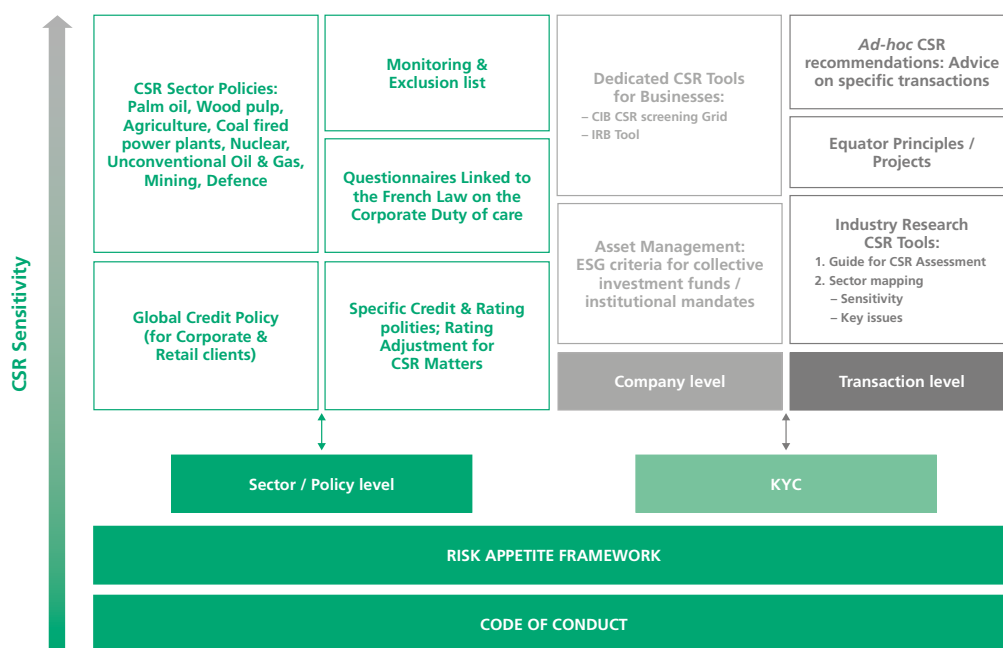


*Société Générale processes for climate risk identification and assessment
(source page 29)*

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
		Corporates loan book	Based on scenario analysis (Climate Vulnerability Indicator)	Client engagement on climate strategy
Physical	Credit	Sovereign loan book	Under development	-
		Corporates loan book		
		Retail loan book		
		Sovereign loan book		
Operational	Own operations	Part of operational risk framework	Mitigation action	

*BNP Paribas ESG risk management integration framework overview
(source page 37)*



A comprehensive ESG risk management system for products and services provided by the Group

Metrics and Targets

Société Générale environmental operational metrics (source page 49)

Figure 11: GHG emissions (S1-3) own operations

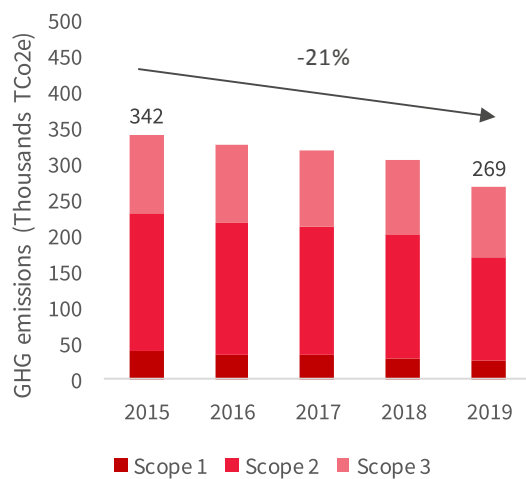


Figure 12: Split of GHG emission (S1-3) 2019

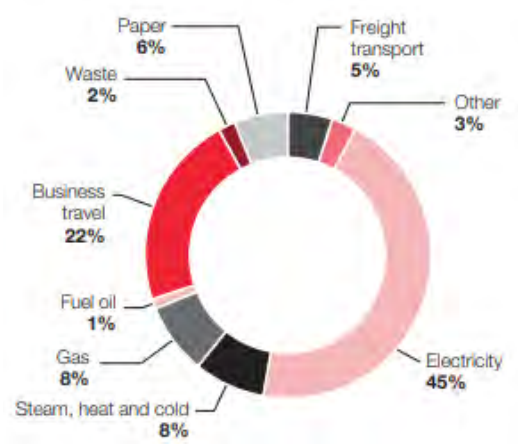


Figure 13: Emission per occupant commitment

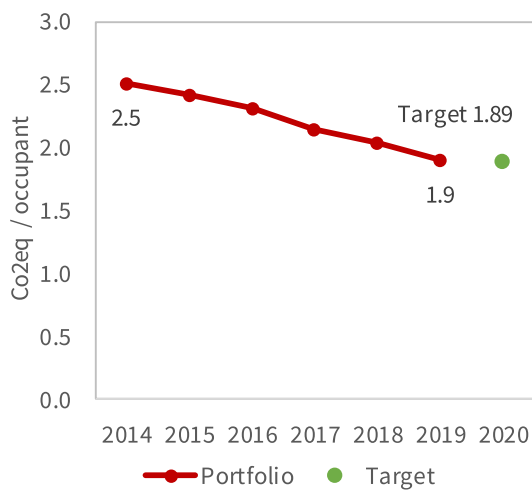
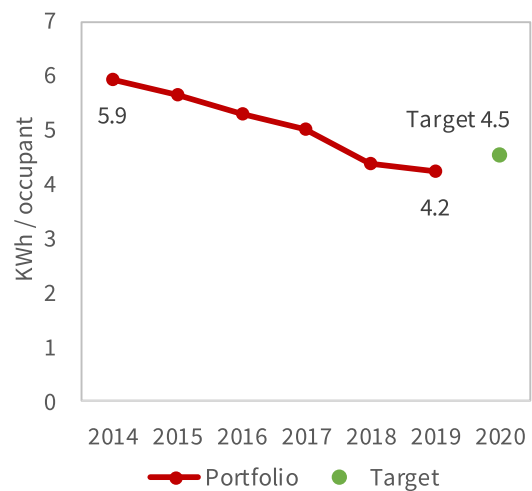


Figure 14: Energy per occupant commitment



Goldman Sachs environmental operational metrics (source page 16)

Energy and GHG Emissions

	Trend 2018–2019	2019	2018 ¹	2017 ¹
Energy				
Global Direct Energy Consumption (MWh)	↑	45,281	41,237	41,207
Natural Gas		93%	91%	90%
Fuel Oil		7%	9%	10%
Global Intermediate Energy Consumption (MWh)	↓	489,908	508,703	499,077
Purchased Electricity		96%	96%	97%
Purchased Steam & Chilled Water		4%	4%	3%
Global Direct and Intermediate Energy Consumption (MWh)	↓	535,189	549,940	540,283
◊Reduction in Global Energy Consumption from Baseline (%) ²	↓	-12%	-10%	-12%
Global Renewable Energy Consumption (MWh)	↓	460,455	463,192	453,518
◊Percent Renewable Energy	↑	98%	95%	94%
Greenhouse Gas (GHG) Emissions				
Scope 1 — Direct (metric tons CO₂ equivalent [tCO₂e])	↑	12,673	11,565	11,231
Natural Gas		68%	66%	67%
Fuel Oil		6%	8%	9%
HFC Refrigerants		26%	26%	24%
Scope 2 (location) — Indirect (tCO₂e)	↓	166,249	187,418	189,599
Purchased Electricity		98%	98%	99%
Purchased Steam & Chilled Water		2%	2%	1%
Scope 2 (market) — Indirect (tCO₂e)	↓	9,109	16,284	18,410
Purchased Electricity		64%	81%	87%
Purchased Steam & Chilled Water		36%	19%	13%
Scope 3: Category 6 — Business Travel (tCO₂e)	↓	135,473	139,893	120,001
Commercial Air		83%	88%	88%
Other Travel ³		17%	12%	12%
Total Emissions: Scope 1 & 2 (location) (tCO₂e)	↓	178,922	198,983	200,830
Office Scope 1 & 2		55%	53%	53%
Data Center Scope 1 & 2		45%	47%	47%
Total Emissions: Scope 1, 2 (market) (tCO₂e)	↓	21,782	27,849	29,641
Total Emissions: Scope 1, 2 (market), and 3 Category 6 (tCO₂e)	↓	157,255	167,742	149,642
Verified Carbon Offset Emissions Reductions (tCO ₂ e) ¹		157,255	165,051	146,950
◊Net Emissions: Scope 1, 2 (market), and 3 Category 6 (tCO₂e)¹		0	0	0
Revenues (tCO₂e/\$M)⁴	↓	4.9	5.4	6.1
Rentable Square Feet (KgCO₂e/sq. ft.)⁴	↓	14.9	17.9	20.7
Employee (tCO₂e/employee)⁴	↓	4.7	5.4	6.0

Notes:

Note 1: Historical energy, water and GHG emissions data has been adjusted and restated from baseline 2013 onward to account for acquisitions and divestitures. Carbon offsets and net emissions reflect verified totals in the year of initial reporting.

Note 2: This symbol ◊ before an indicator denotes an environmental commitment through Goldman Sachs' 2015 EPF; reductions are from a 2013 baseline.

Note 3: This includes charter air, rail/bus, ferry, car and hotels.

Note 4: Metrics are normalized using Scope 1 & Scope 2 (location) emissions.

DBS carbon weighted metrics for sample client population (source page 20)

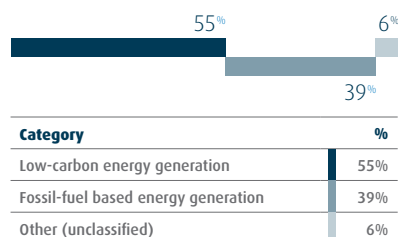
Industry sectors	2019 (N = 368 customers)		2018* (N = 303 customers)	
	Sample population as % of IBG exposure	Sample population weighted carbon to revenue ⁽⁹⁾ Tonne CO ₂ e ⁽¹⁰⁾ / SGD million	Sample population as % of IBG exposure	Sample population weighted carbon to revenue Tonne CO ₂ e/ SGD million
Agriculture	1.0	259	0.5	525
Chemicals	0.6	462	0.1	474
Energy	2.3	1,134	1.7	1,533
Mining and metals	0.7	841	0.3	1,711
Real estate and transportation	5.1	165	5.2	192
Total	9.7	—	7.8	—

BMO exposure to carbon-related assets (source page 6)²⁹

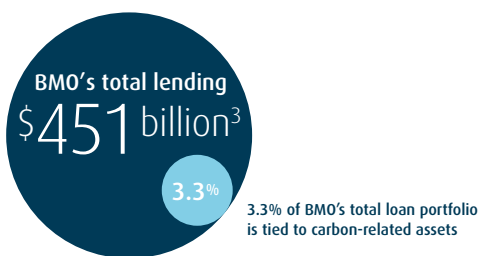
We have implemented financing guidelines to address environmental risks for specific lines of business, and we apply enhanced due diligence to transactions with customers operating in environmentally sensitive industries. This includes efforts to develop an understanding of borrowers' climate change adaptation and mitigation strategies.

To avoid overexposure to any one sector or geographic region that might be impacted by climate-related risks, BMO maintains a diverse lending portfolio. We have conducted a sector-specific analysis across our lending portfolio to assess our exposure to climate-sensitive industries. The results of this analysis are disclosed below. We have determined that our lending in support of carbon-related assets in 2019 was approximately \$14.7 billion and represented 3.3% of our total lending portfolio³. We have also analyzed our power generation portfolio and determined that approximately 55% of lending is to low-carbon energy generation². The results of this analysis are disclosed below.

BMO's Lending to Power Generation, as at October 31, 2019

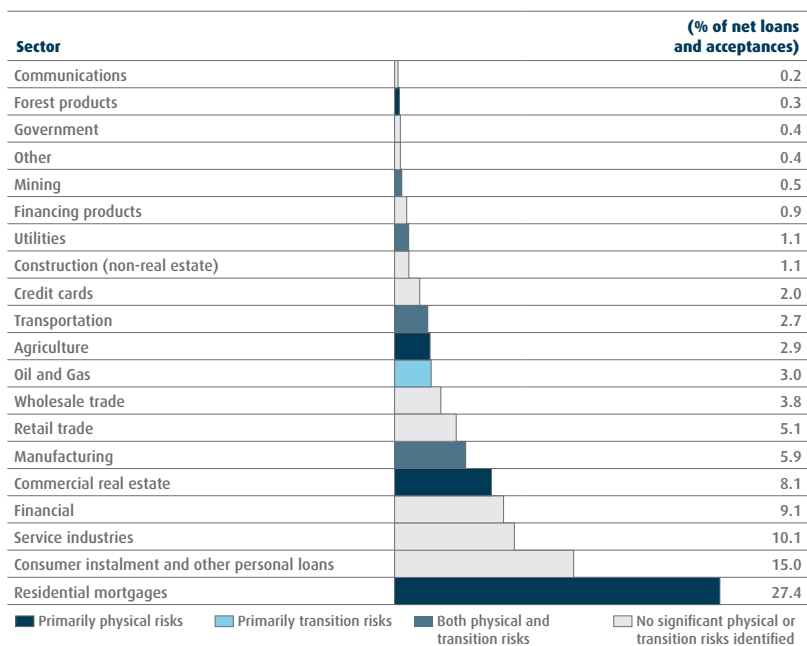


Lending to Carbon-Related Assets



³ Total loans and acceptances, net of allowance for credit losses on impaired loans.

Sensitivity to Climate Risk of BMO Lending Exposures, as at October 31, 2019



29 For the latest view of figures see [BMO Financial Group 2020 Climate Report](#), published January 2021.

*Royal Bank of Canada exposure in climate sensitive sectors (source page 10)
and other financial environmental metrics (source page 13)*

Table 1: Client sectors most sensitive to transition risk

Sectors	Credit risk		Climate risk drivers					Examples of potential impacts for clients in these sectors may include
	\$bn	% of total exposure	Technology	Policy	Markets	Legal	Reputation	
Wholesale								<ul style="list-style-type: none"> Changes in demand for goods/ services Reduced revenue Increased operating and production costs Asset devaluation Difficulty accessing financing Increased capital costs Business model failures Reputational damage Legal fines or judgments
Automotive	\$17.0	1.5%						
Oil & gas	\$20.2	1.8%						
Industrial products	\$16.6	1.5%						
Mining & metals	\$6.8	0.7%						
Transportation	\$14.1	1.3%						
Utilities	\$32.7	3.0%						
Sub-total	\$107.4	9.8%						

Table 2: Client sectors most sensitive to physical risk

Sectors	Credit risk		Climate risk drivers		Examples of potential impacts for clients in these sectors may include
	\$bn	% of total exposure	Chronic	Acute	
Wholesale					
Agriculture	\$10.9	1.0%			<ul style="list-style-type: none"> Change in asset valuation Impaired assets, write-offs and early retirement of existing assets Lower property values Increased capital costs and operating costs Reduced or disrupted production capacity Reduced revenue from lower sales or output Increased insurance premiums or inability to insure
Forest products	\$2.3	0.2%			
Industrial products	\$16.6	1.5%			
Mining & metals	\$6.8	0.6%			
Real estate & related	\$74.9	6.8%			
Sub-total	\$492.3	44.8%			
Retail					
Residential mortgages & home equity lines of credit	\$380.9	34.6%			
Sub-total	\$492.3	44.8%			

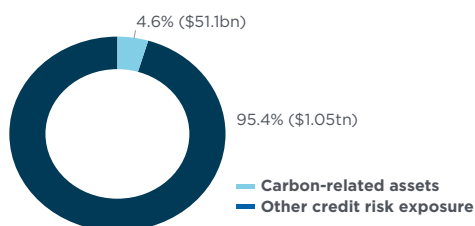
Legend



Financing

We maintain a diversified lending portfolio, which improves our resilience to geographic or sectoral downturns and minimizes concentrations of credit exposure. The 2019 Annual Report provides details on our credit risk exposure by portfolio, sector and geography (p. 59), and other details on our business strategy and performance. We have identified additional key metrics related to our financing activities based on the TCFD recommendations. These include the amount and percentage of carbon-related assets relative to total assets, as well as the amount of lending and other financing connected with climate-related opportunities.

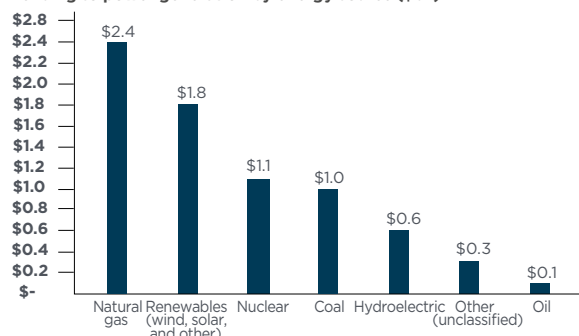
Credit risk exposure to carbon-related assets relative to total credit risk exposure



Progress on our commitment to \$100 billion in sustainable financing by 2025



Lending to power generation by energy source (\$bn)

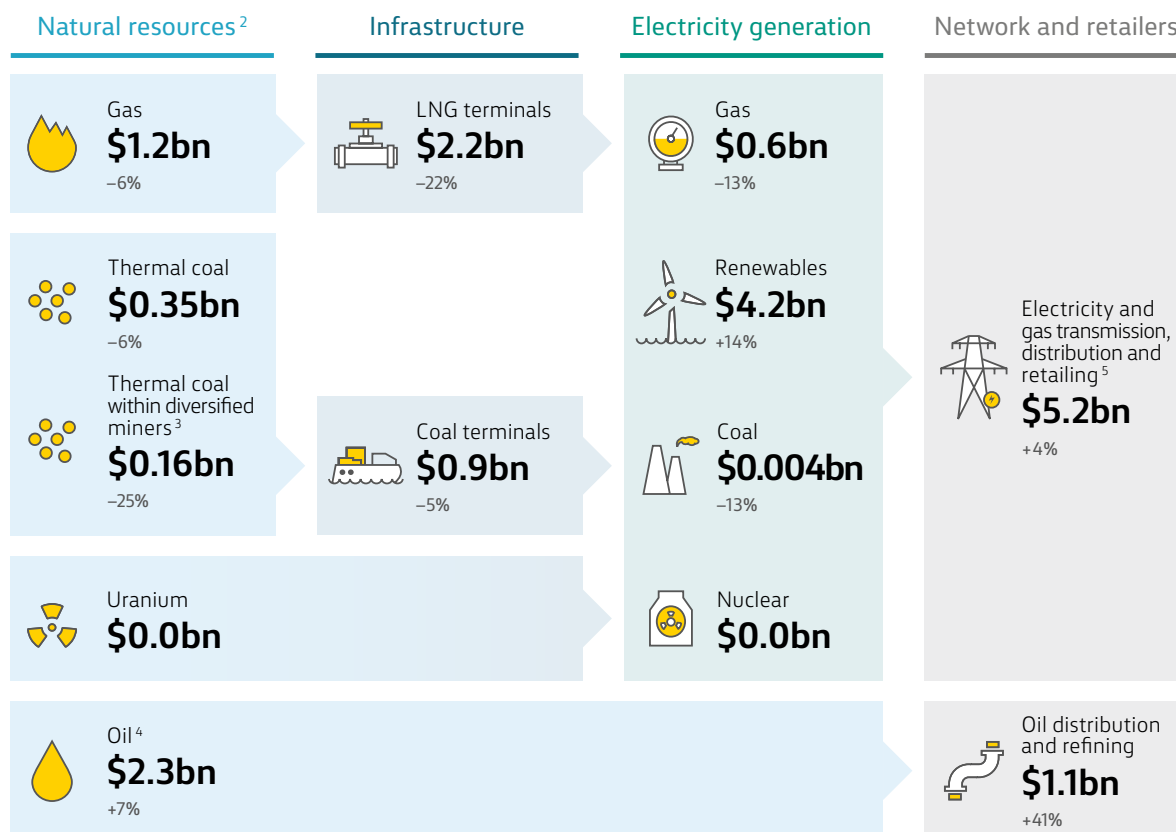


Sustainable finance performance metrics	\$bn
Value of green, social and sustainability bonds underwritten	\$4.8
Value of eligible U.S. municipal bonds underwritten	\$6.4
Tax credit investments closed in affordable housing	\$1.4
Tax credit investments closed in renewable energy	\$0.1
Capital raised for eligible clients and projects	\$3.4
Value of M&A deals for eligible clients and projects	\$1.1
Credit extended to eligible clients and projects	\$7.4
Value of green and sustainability linked loans	\$1.3
Total value in 2019	\$25.9

Commonwealth Bank of Australia energy exposures (source page 43)

Energy value chain exposures as at 30 June 2020¹

Key: +/- change since FY19



1 All figures are Total Committed Exposures (TCE) excluding Commitment at Offer as at 30 June 2020. Figures represented have been specifically derived based on material client exposures, and have not been netted off against any insurance or guarantees that mitigate the Bank's risk exposure to clients. Not included are 'Other energy-related' exposures (\$0.1 billion) which comprise smaller loans and exposure to energy trading entities.

2 Exposures to metallurgical coal mining (\$0.02 billion), and metallurgical coal mining within diversified miners (\$0.06 billion) not included.

3 Thermal coal exposure within each diversified miner is calculated as the Group's exposure to the miner, excluding exposure to coal subsidiaries, multiplied by the percentage EBITDA contribution of thermal coal in its latest annual financial statements. Exposures to coal subsidiaries of diversified miners, i.e. subsidiaries whose business activities are predominantly related to coal mining, are allocated to thermal coal.

4 Exposures in Oil (Natural resources) for 30 June 2019 have been revised due to reclassification of some clients, which impacts the year-on-year change percentages.

5 Electricity and gas transmission, distribution and retailing includes exposures to companies that operate across the electricity and gas supply chain, including vertically integrated gentailers; exposures to entities that operate domestic gas pipeline, processing and storage facilities; and exposures to companies that provide retail electricity and gas products to end-customers.

Commonwealth Bank of Australia emissions intensity of portfolio
(source page 44)

Measuring the emissions intensity of our business lending

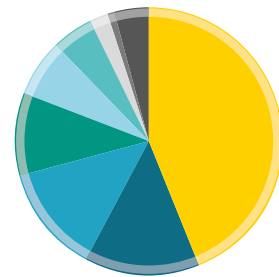
We continue to assess the emissions arising from our business lending across Commonwealth Bank, ASB and Bankwest. The insights garnered from this analysis provide us with a quantitative basis to identify key priorities to reduce the emissions arising from our business lending portfolio.

Our sixth iteration of this annual assessment has demonstrated overall stability in the emissions intensity of the Group's business lending portfolio, at 0.26kgCO₂-e/\$AUD of expenditure. With the exception of Property and business services, the emissions intensity of expenditure in each sector across our portfolio decreased in FY19. The Agriculture, forestry and fishing, and Electricity, gas and water supply sectors continue to represent the most emissions intensive sectors in the Bank's lending portfolio.

An increase in the proportion of our lending exposure to the Agriculture, forestry and fishing sector offset the broader decline in other sectors' emissions intensity. The Electricity, gas and water supply sector's emissions intensity continues to decline year-on-year, partially driven by reduced exposure to coal electricity generation. In addition, several renewable energy projects became operational, and this phase is typically less carbon intensive than the construction phase.

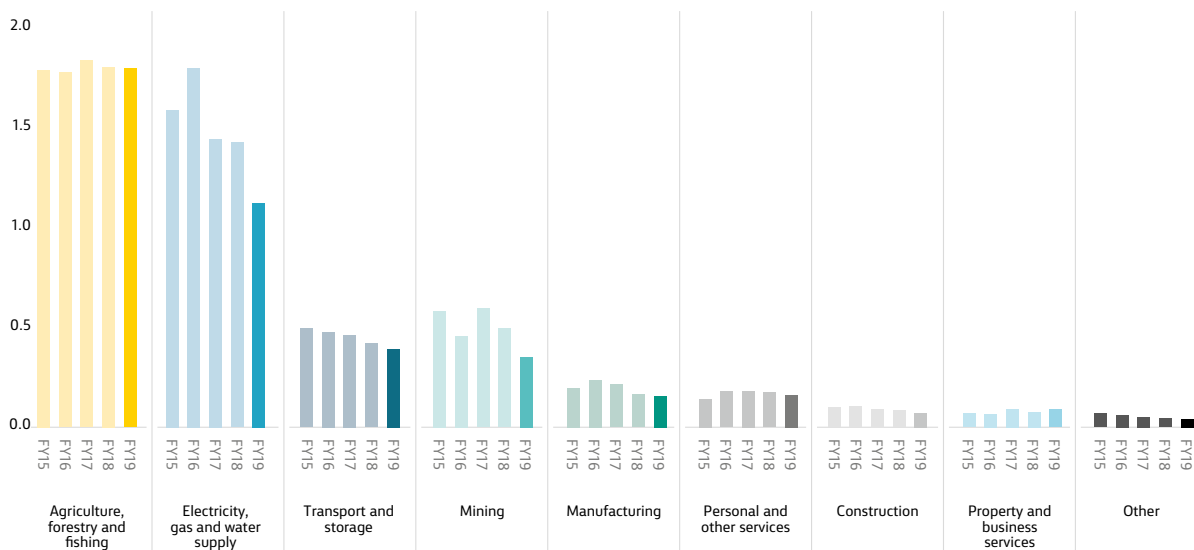
Within the Mining sector, metal ore mining had the largest drop in emissions intensity. The Bank's exposures to thermal coal mining also decreased in the period.

Group business lending
% of assessed emissions by sector (FY19)



Agriculture, forestry and fishing	44%
Transport and storage	14%
Electricity, gas and water supply	13%
Manufacturing	10%
Property and business services	7%
Mining	5%
Construction	2%
Personal and other services	1%
Other	4%

Group business lending emissions intensity of expenditure (kgCO₂-e/\$AUD)



Additional Examples – TCFD Releases at the time of Publication of this Report

Sources

Barclays - [Barclays PLC Climate-related Financial Disclosures 2020](#)

HSBC - [HSBC Holdings plc TCFD Update 2020](#)

NatWest - [NatWest Plc Climate-related disclosures report 2020](#)

Standard Chartered - [Standard Chartered TCFD 2020 Facilitating climate action where it matters most](#)

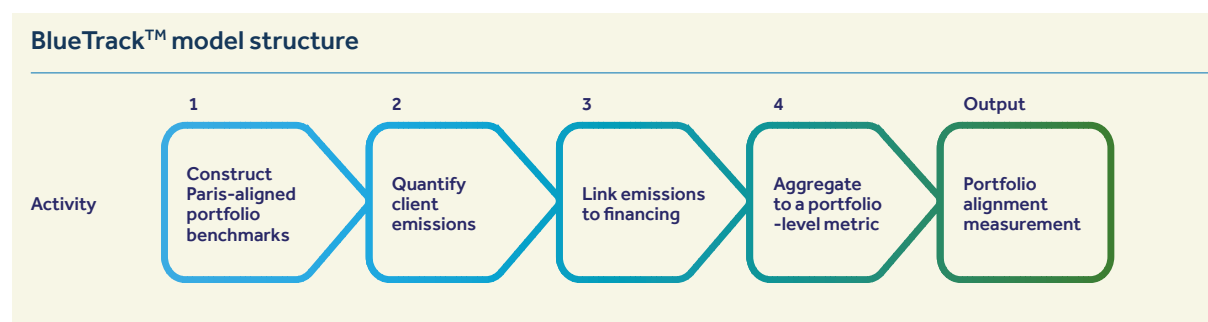
Whilst the cut-off date for the review of disclosures was December 30th, 2020, given the rapid pace of change, we have provided a few additional examples of advanced disclosures released by March 2021 (at the time of

publication of this study). The following disclosures have not been considered in the maturity assessment analysis.

1. Development of finance emissions measurement capabilities and decarbonisation target setting

Barclays introduced a methodology for measuring finance emissions (BlueTrack) to support Paris Agreement alignment and embed climate impact in financing decisions. The model establishes a set of benchmarks to define how the emissions embodied by the bank's financing portfolios will need to change over time to be aligned with the

Paris Agreement. The model then determines how Barclays' sector portfolios are performing against these benchmarks by measuring the emissions that clients produce, determining how those emissions should be linked to the financing provided by the bank, and aggregating these measurements into portfolio-level metrics.



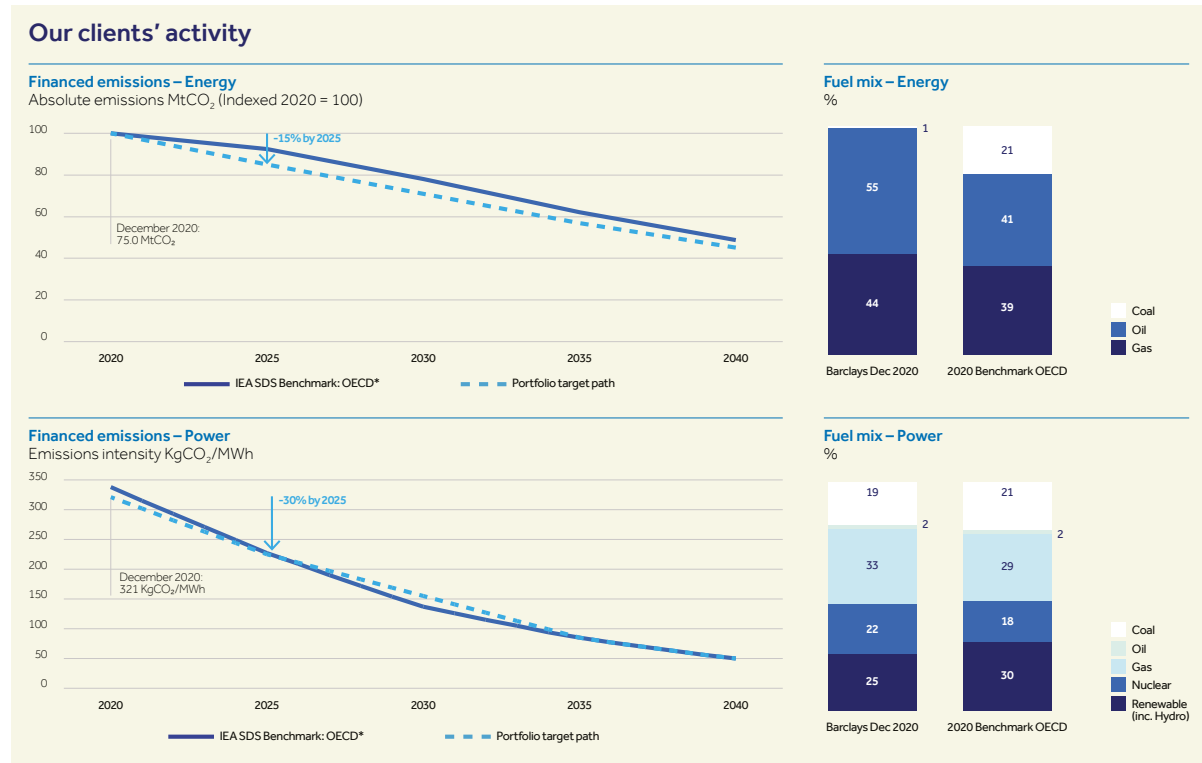
Barclays BlueTrack model

The bank discloses a portfolio level view of financed emissions in the energy and power sectors and details specific decarbonisation targets for Paris alignment:

- Energy portfolio absolute emissions will reduce by 15% by 2025 to reach benchmark alignment.
- Power portfolio emissions intensity will reduce by 30% by 2025, with the aim to reach benchmark alignment by 2035.

Barclays climate dashboard

Our climate dashboard



NatWest calculated scope 1 and scope 2 financed emissions attributable to loans and investments in 4 sectors based on the PCAF standard. In addition, for oil and gas extraction and automotive manufacturing sectors, the bank

included scope 3 emissions based on downstream use of products sold as they constitute a large proportion of the overall estimated emissions in these sectors.

NatWest Financed emissions

Sector	Preliminary estimates of financed emissions and emission intensities 2019				Preliminary emission intensity estimates 2030 and 2050				
	Financed emissions (MtCO ₂ e/y) ⁽¹⁾		Physical emissions intensity ⁽²⁾	Economic emissions intensity (tCO ₂ e/€M invested) ⁽³⁾	PCAF Data quality score		Proposed 50% absolute emissions reduction intensity (2030)	Paris alignment emissions intensity (2030)	Paris alignment emissions intensity (2050)
	Scope 1 and 2	Scope 3			Scope 1 and 2	Scope 3			
Residential mortgages	2.2		39 kgCO ₂ e/m ²	12	4.1		19 kgCO ₂ e/m ²	20 kgCO ₂ e/m ²	0.1 kgCO ₂ e/m ²
Agriculture (primary farming)	3.6		2,205 tCO ₂ e/€m revenue	940	4.3		1,103 tCO ₂ e/€m revenue	1,449 tCO ₂ e/€m revenue	1,165 tCO ₂ e/€m revenue
Automotive manufacturing ⁽⁴⁾	0.01	0.53	168 gCO ₂ /km	1,790	2.1	3.1	84 gCO ₂ /km	121 gCO ₂ /km	31 gCO ₂ /km
Oil and gas extraction	0.08	1.9	75 tCO ₂ e/TJ	3,054	2.4	2.6	38 tCO ₂ e/TJ	Guidance under development	Guidance under development

Notes:
 (1) MtCO₂e/y is million tonnes of carbon dioxide equivalent emitted per year.
 (2) Physical emissions intensity: Financed emissions divided by an output or activity value.
 (3) Economic emissions intensity: Financed emissions divided by the loan and investment amount. This helps understand how the emissions intensity of different portfolios (or parts of portfolios) compare to each other per monetary unit.
 (4) For automotive manufacturing, Scope 3 emissions and emissions intensity estimates only relate to tailpipe emissions.

The bank set climate finance targets to:

- At least halve the climate impact of their financing activity by 2030.
- Stop lending and underwriting to companies with >15% of activities related to thermal and lignite coal and to all major oil and gas producers unless they have a credible transition plan.

2. Enhanced disclosures of stress testing exercises

Standard Chartered discloses the results of a granular corporate level assessment for 100 clients across several sectors, covering about 10% of corporate exposure, considering orderly

(see below) and disorderly transition scenarios. The bank details the weighted probability of default for different time horizons for the sample of clients.

Standard Chartered PD estimates

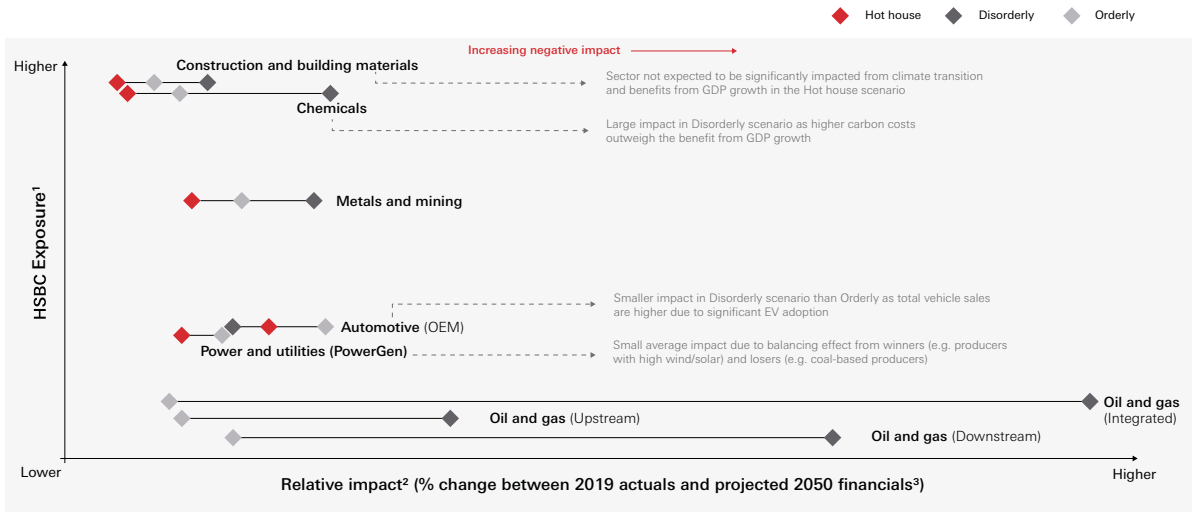
Orderly transition	# clients	WAPD						
		2019	2025	2030	2035	2040	2045	2050
Construction	16	0.4%	0.4%	0.5%	0.5%	0.6%	0.9%	1.6%
Consumer Durables & Apparel	20	0.5%	0.5%	0.6%	0.6%	1.3%	1.6%	1.7%
CRE	20	0.3%	0.3%	0.4%	0.4%	0.4%	0.7%	1.1%
Energy	21	0.7%	0.8%	0.8%	1.2%	2.5%	3.9%	8.3%
Manufacturing – Automobiles and Components	16	0.3%	0.3%	0.3%	0.4%	0.6%	2.3%	2.4%
Manufacturing – Cement	7	1.2%	1.3%	1.4%	1.4%	1.6%	2.5%	4.5%
Grand total	100	0.5%	0.5%	0.5%	0.6%	1.0%	1.7%	2.8%

HSBC details the key findings of a climate stress testing pilot for six high transition risk sectors and sub-sectors considering 3 scenarios in the corporate lending portfolio. The bank provides a commentary for each sector on the materiality of credit losses, exposure and expected drivers of change.

The graphic below illustrates the level of risk exposed to within each portfolio, and maps the exposure of each sector and the projected 'relative financial impact' of transition risk from climate change.

HSBC transition risk heatmap

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

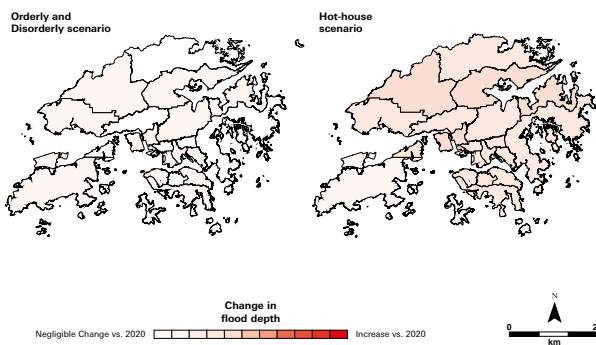


HSBC also completed stress testing to assess the physical climate impact on 97 of their most critical properties. The six-step modelling process covered all major climate-induced threats at the specific location of the buildings. The bank details the key findings of the analysis, including the number of properties facing increased risks from physical hazards by 2050 under a three-degrees scenario.

To understand the level of climate risk within the retail mortgage portfolio, HSBC completed a financial risk assessment on the UK and Hong Kong mortgage portfolios, which together account for approximately 65% of the total retail mortgage portfolio. The bank details projections of the flooding impact and average annualised losses.

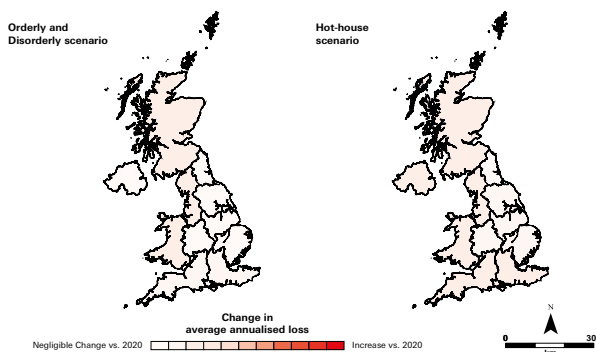
HSBC flooding risk impact – residential real estate

Figure 1: Evolving flood impact on our Hong Kong residential real estate portfolios – 1:200 return period view¹



Source: Marsh
1 Projected change in flood depth at ground level for the 1:200 year return period (i.e. 0.5% annual exceedance probability) at the locations of mortgaged properties over the two forecast scenarios compared to 2020.

Figure 2: Evolving flood impact on our UK residential real estate portfolios – average annual loss view²



Source: Marsh
2 Projected change in borrowers' financial risks across all return periods, i.e. changes in their potential flood insurance needs/costs (expressed as an average annualised loss), at the locations of mortgaged properties over the two forecast scenarios compared to 2020.

Standard Chartered analysed the physical risk profile of their operating locations leveraging a physical risk tool, provided by Munich Re's

NATHAN, which uses standardised scenarios and set time horizons to assess future risk from acute and chronic physical risks.

Standard Chartered – physical risk on offices and branches

Figure 63: Initial assessment of gross physical risk profile for our offices and branches

Physical risk	Operating locations exposed to extreme physical risk (%)				
	Group	ASA	GCNA	AME	EA
Extreme flood risk	19%	17%	24%	11%	25%
Extreme wildfire risk	1%	0%	0%	2%	0%
Extreme storm risk	20%	3%	43%	0%	0%
Extreme sea-level rise (RCP 8.5, by 2100)	2%	0%	2%	4%	4%

The bank also used the Munich Re's NATHAN tool to assess the current and forward-looking physical risks at a property level for six markets, covering

approximately 60% of the total residential mortgage exposure.

Standard Chartered – gross physical risk profile for retail mortgages

Figure 62: Initial assessment of gross physical risk profile for retail mortgages

Physical risk type	Singapore	Malaysia	India	Indonesia	Taiwan	Korea
Extreme flood risk	2%	7%	21%	23%	11%	13%
Extreme wildfire risk	0%	0%	0%	0%	0%	0%
Extreme storm risk	0%	0%	2%	0%	100%	8%
Extreme sea-level rise (RCP 8.5, by 2100)	0%	0%	1%	2%	2%	1%

3. Client engagement to enhance understanding of climate risk

Barclays developed a credit risk materiality matrix (known as Credit Climate Lens) to identify and assess how climate change may impact the group’s wholesale credit risk exposures, against physical and transition risks. The Credit Climate Lens review is completed for wholesale clients operating in elevated risk sectors with material exposure of more than £5m and consists of 20 questions grouped into themes. Each Lens question has a specific threshold assigned to it that corresponds to a rating of Low, Moderate or High risk. The results are aggregated to provide an overall rating for the client with rationale for the assigned rating, and comments on both physical and transition risks. In 2020 the Credit Climate Lens review has been completed for 415 clients, representing 82% of the bank’s corporate exposure within elevated sectors in Barclays International.

Standard Chartered developed a granular client-level climate risk assessment framework, which provides a holistic overview of the gross physical and transition risks faced by each client, and the quality of their adaptation and mitigation strategies. Throughout 2021, the banks aim to complete this assessment for the top 2,000 corporate clients (by nominal exposure), which accounts for approximately 80% of the corporate exposure of the group. The bank discloses insights on governance and disclosures, adaptation actions and transition readiness for an initial group of 100 corporate clients.

Standard Chartered initial insights from client engagements

Figure 31: Initial insights on governance and disclosures for clients in scope

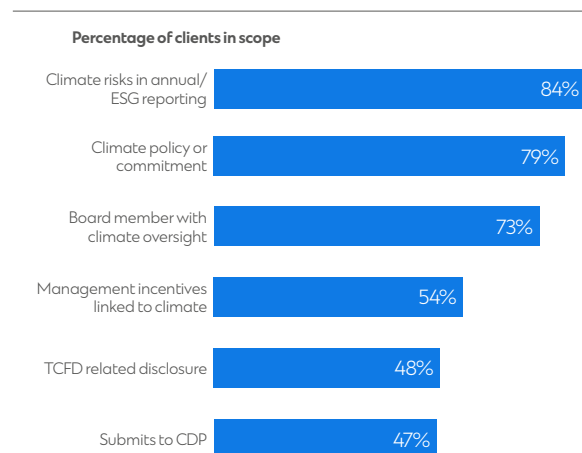


Figure 33: Initial insights on adaptation actions for clients in scope

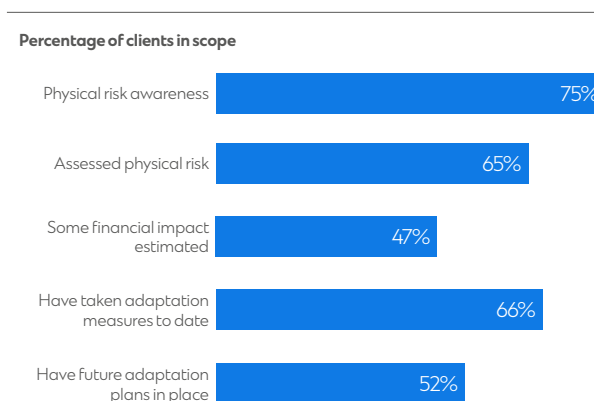
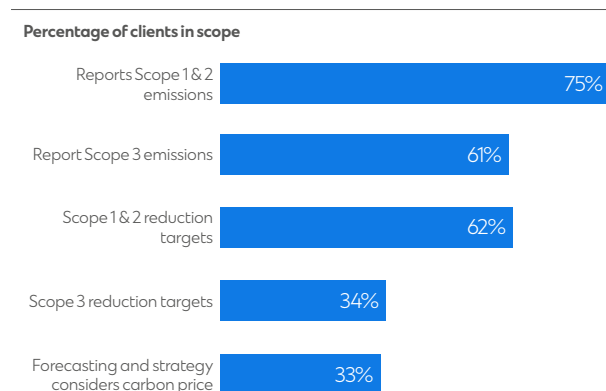


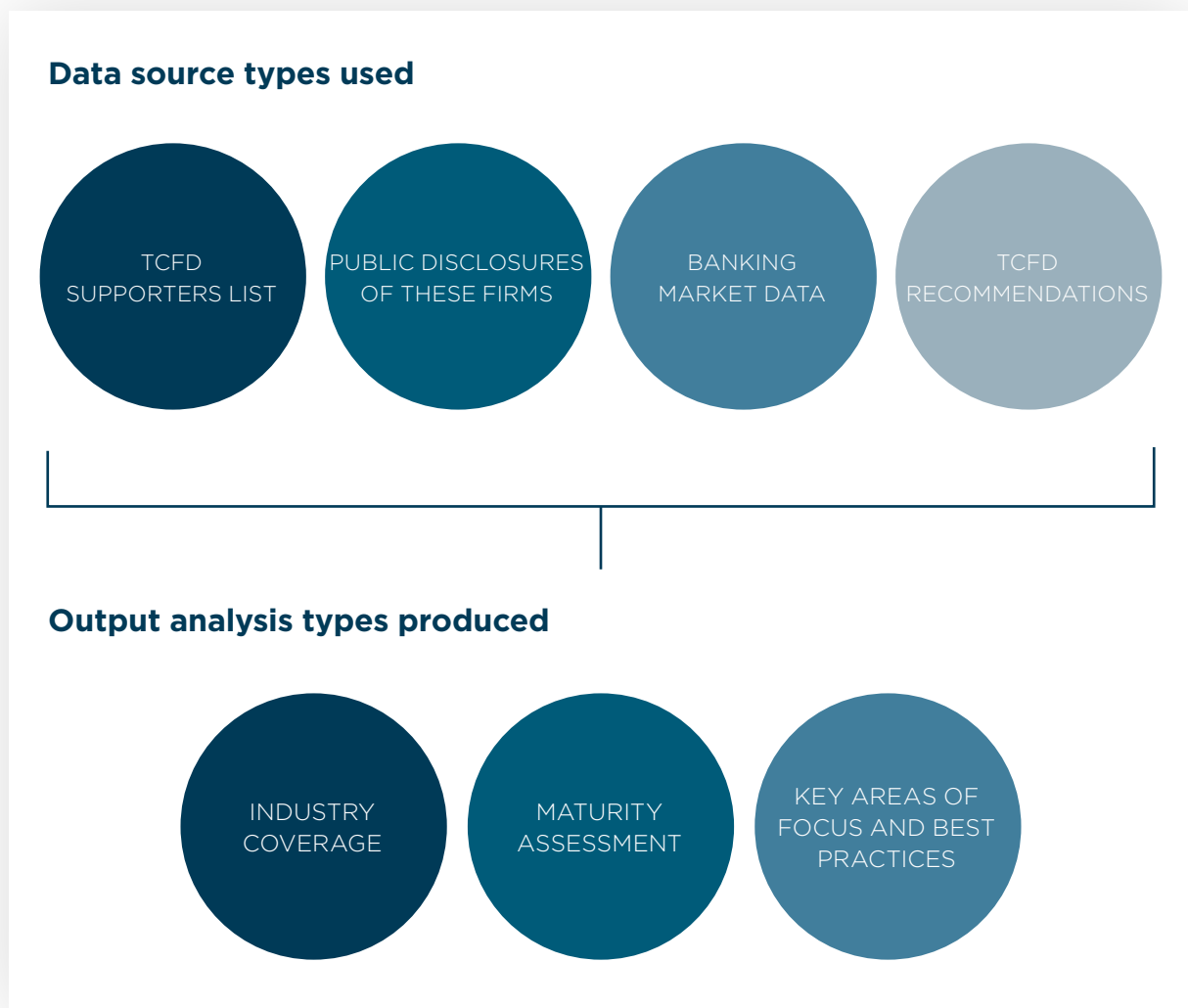
Figure 35: Transition readiness indicated by emission reduction targets, climate commitments and disclosure



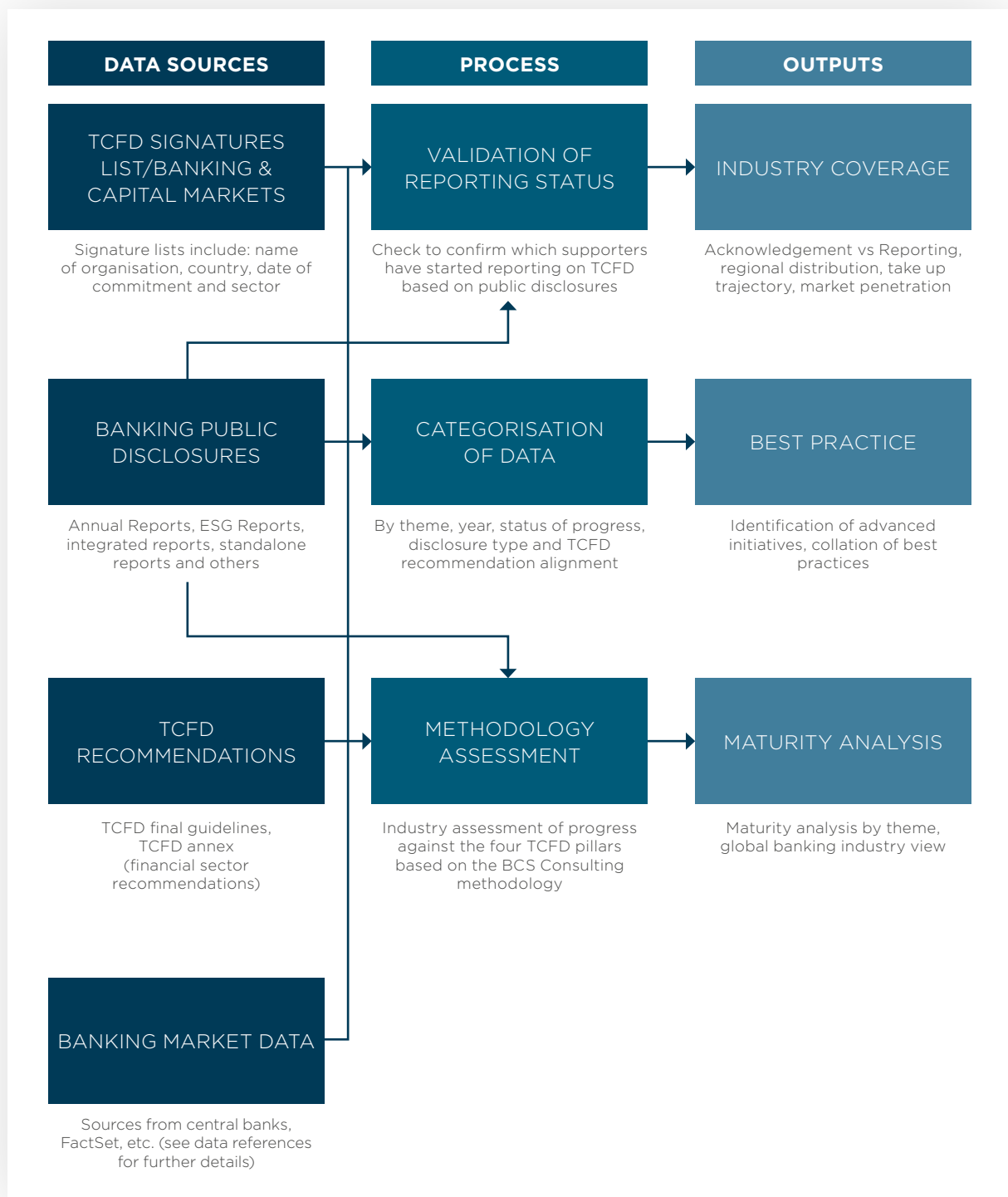
d. Report Methodology

To support qualitative and quantitative analysis, the approach used to prepare the report consisted of four stages:

1. Reviewing public sources of data;
2. Collating and classifying the data;
3. Applying the assessment methodology; and
4. Consolidating results to provide an industry view.



TCFD report – approach overview



Scope

The study analysed the disclosures of 111 banks who had formally endorsed the TCFD framework by June 5th, 2020. The list was sourced from the TCFD supporters directory. The study looked specifically at financial sector banks, capital markets, and diversified financial services supporters. Complete list of firms analysed is detailed below. Financial Sector – TCFD endorsement for banks³⁰ – FSB 2020 (Extracted 5th June 2020).

Name	Location	Region	Endorsement Date	Total Assets (millions, USD)	Source of Asset
ABN AMRO Bank N.V.	Netherlands	Europe	Nov-17	420,998	FactSet (2019)
AIB Group plc	Ireland	Europe	Sep-19	110,636	FactSet (2019)
Aozora Bank, Ltd.	Japan	Asia	Mar-20	49,093	FactSet (2020)
Australia and New Zealand Banking Group Limited (ANZ)	Australia	Oceania	Jun-17	661,728	FactSet (2019)
Banco Bradesco	Brazil	South America	Feb-20	337,867	FactSet (2019)
Banco Santander	Spain	Europe	Dec-17	1,709,225	FactSet (2019)
Bancolombia	Colombia	South America	Aug-19	71,945	FactSet (2019)
Bank J. Safra Sarasin Ltd.	Switzerland	Europe	May-19	38,825	Bank J. Safra Sarasin Ltd. Annual Report (2019)
Bank of Africa – BMCE Group	Morocco	Africa	Sep-18	8,772	Bank of Africa – BMCE Group Bank of Africa Annual Report 2018
Bank of America	United States	North America	Jun-17	2,444,325	FactSet (2019)
Bank of Ireland	Ireland	Europe	Feb-20	148,039	FactSet (2019)
Bank of New York Mellon	United States	North America	Dec-19	381,508	FactSet (2019)
Bankia	Spain	Europe	Jun-18	234,006	FactSet (2019)
Bankinter	Spain	Europe	May-19	93,990	FactSet (2019)
Barclays	United Kingdom	Europe	Jun-17	1,510,518	FactSet (2019)
Bayerische Landesbank	Germany	Europe	May-19	253,650	FactSet (2019)
BBVA	Spain	Europe	Dec-17	784,280	FactSet (2019)
BMO Financial Group	Canada	North America	Dec-17	648,378	FactSet (2019)
BNP Paribas	France	Europe	Jun-17	2,429,890	FactSet (2019)
BTG Pactual S.A.	Brazil	South America	Dec-17	34,055	FactSet (2018)
CaixaBank	Spain	Europe	Dec-17	439,362	FactSet (2019)
Canadian Imperial Bank of Commerce (CIBC)	Canada	North America	Mar-18	495,761	FactSet (2019)
Citibanamex	Mexico	North America	Mar-20	75,000	FactSet (2019)

30 TCFD endorsement list sourced from TCFD supporters directory. Categories included from the TCFD supporters list are banks/banking, capital markets and diversified financial services. Alliance Bernstein was removed from the official list as they are not a bank.

Name	Location	Region	Endorsement Date	Total Assets (millions, USD)	Source of Asset
Citigroup Inc.	United States	North America	Jun-17	1,957,040	FactSet (2019)
Commonwealth Bank of Australia	Australia	Oceania	Mar-18	685,260	FactSet (2019)
Concordia Financial Group, Ltd.	Japan	Asia	Dec-19	175,332	FactSet (2020)
Crédit Agricole S.A.	France	Europe	Dec-17	1,984,179	FactSet (2019)
Credit Suisse Group AG	Switzerland	Europe	Nov-17	813,027	FactSet (2019)
Daiwa Securities Group	Japan	Asia	Apr-18	220,670	FactSet (2020)
Danske Bank A/S	Denmark	Europe	Sep-18	564,977	FactSet (2019)
DBS	Singapore	Asia	Dec-17	430,676	FactSet (2019)
Deutsche Bank	Germany	Europe	Sep-18	1,456,639	FactSet (2019)
Development Bank of Japan	Japan	Asia	Jun-18	162,980	Development Bank of Japan Outline (2020)
DGB Financial Group	South Korea	Asia	Sep-18	62,669	FactSet (2019)
DNB ASA	Norway	Europe	Jun-17	317,879	FactSet (2019)
E.SUN Financial Holding	Taiwan	Asia	Dec-17	83,343	E.SUN Financial Holding Annual Report (2019)
European Bank for Reconstruction and Development (EBRD)	United Kingdom	Europe	Mar-18	77,901	EBRD Annual Report (2019)
Evli Bank	Finland	Europe	Aug-19	1,515	Evli Bank Balance Sheet (2020)
First Abu Dhabi Bank	United Arab Emirates	Middle East	Dec-19	223,777	FactSet (2019)
First Financial Holding Co., Ltd.	Taiwan	Asia	Apr-20	106,974	FactSet (2019)
GLS Gemeinschaftsbank eG	Germany	Europe	Mar-20	7,418	GLS Gemeinschaftsbank eG Key Figures (2018)
Goldman Sachs	United States	North America	Sep-18	992,970	FactSet (2019)
Gulf International Bank (UK) Ltd.	United Kingdom	Europe	Oct-19	30,242	Gulf International Bank (UK) Ltd. Annual Report (2019)
Handelsbanken	Sweden	Europe	Jul-18	327,919	FactSet (2019)
Hitachi Capital Corporation	Japan	Asia	Jun-19	34,454	FactSet (2020)
HSBC Holdings plc	United Kingdom	Europe	Jun-17	2,715,152	FactSet (2019)
Ibercaja Banco	Spain	Europe	Aug-19	63,421	Ibercaja Banco Annual Report (2019)

Name	Location	Region	Endorsement Date	Total Assets (millions, USD)	Source of Asset
IGM Financial	Canada	North America	Dec-19	11,869	FactSet (2019)
Industrial and Commercial Bank of China (ICBC)	China	Asia	Jun-17	4,322,529	FactSet (2019)
ING Group	Netherlands	Europe	Jun-17	1,000,983	FactSet (2019)
International Finance Corporation (IFC)	United States	North America	Sep-18	99,257	International Finance Corporation (IFC) Annual Report (2019)
Intesa Sanpaolo	Italy	Europe	Oct-18	916,075	FactSet (2019)
IOOF Holdings Ltd.	Australia	Oceania	Sep-18	2,707	FactSet (2019)
Itaú	Brazil	South America	Oct-17	408,756	FactSet (2019)
Japan Bank for International Cooperation	Japan	Asia	Oct-19	165,312	Japan Bank for International Cooperation Annual Report (2019)
Japan Finance Corporation	Japan	Asia	May-19	197,513	Japan Finance Corporation Annual Report (2019)
Japan Post Bank Co., Ltd.	Japan	Asia	Apr-19	1,953,693	FactSet (2020)
JPMorgan Chase & Co.	United States	North America	Dec-17	2,687,379	FactSet (2019)
Kaiser Partner Privatbank AG	Liechtenstein	Europe	Jan-20	626	Kaiser Partner PrivatBank AG Annual Report (2019)
KB Financial Group	South Korea	Asia	Oct-18	449,868	FactSet (2019)
KBC Group	Belgium	Europe	Dec-17	326,350	FactSet (2019)
KfW Bankengruppe	Germany	Europe	Oct-18	578,153	KfW Bankengruppe Bank website (2019)
Kyushu Financial Group, Inc.	Japan	Asia	Jun-19	102,633	Kyushu Financial Group, Inc. Annual Report (2019)
Lloyds Banking Group	United Kingdom	Europe	Dec-17	1,104,700	FactSet (2019)
Macquarie Group	Australia	Oceania	Apr-19	156,560	FactSet (2020)
Mitsubishi UFJ Financial Group, Inc	Japan	Asia	Dec-17	3,117,701	FactSet (2020)
Mizuho Financial Group	Japan	Asia	Dec-17	1,988,413	FactSet (2020)
Morgan Stanley	United States	North America	Jun-17	896,820	FactSet (2019)
National Australia Bank	Australia	Oceania	Oct-17	571,640	FactSet (2019)
National Bank of Canada	Canada	North America	Apr-18	214,142	FactSet (2019)

Name	Location	Region	Endorsement Date	Total Assets (millions, USD)	Source of Asset
Nationwide Building Society	United Kingdom	Europe	Oct-19	307,558	FactSet (2020)
NatWest	United Kingdom	Europe	Dec-17	957,846	FactSet (2019)
Nomura Holdings, Inc.	Japan	Asia	Jun-18	407,580	FactSet (2020)
Nordea Bank Abp	Sweden	Europe	Dec-18	623,213	FactSet (2019)
Nordic Investment Bank	Finland	Europe	Dec-19	37,299	Nordic Investment Bank Financial Report (2019)
OCBC Bank	Singapore	Asia	Oct-19	354,057	OCBC Bank Annual Report (2019)
PNC Financial Services Group	United States	North America	Oct-19	410,295	PNC Financial Services Group Annual Report (2019)
Rabobank	Netherlands	Europe	Oct-17	662,950	FactSet (2019)
Resona Holdings, Inc	Japan	Asia	Oct-18	560,534	FactSet (2020)
Royal Bank of Canada	Canada	North America	Oct-17	1,087,180	FactSet (2019)
Scotiabank	Canada	North America	Feb-18	826,386	FactSet (2019)
SEB	Sweden	Europe	May-18	362,510	SEB Quarterly Report (2020)
Shin Kong Financial Holdings	Taiwan	Asia	Sep-18	132,800	FactSet (2019)
Shinhan Financial Group	South Korea	Asia	Sep-18	477,686	FactSet (2019)
Shinsei Bank, Limited	Japan	Asia	Jan-20	94,824	FactSet (2020)
Société Générale	France	Europe	Oct-17	1,522,450	FactSet (2019)
SpareBank 1 Østlandet	Norway	Europe	Apr-20	15,338	FactSet (2019)
Standard Chartered	United Kingdom	Europe	Jun-17	720,398	FactSet (2019)
State Street Corporation	United States	North America	Oct-17	245,610	FactSet (2019)
Sumitomo Mitsui Financial Group	Japan	Asia	Dec-17	2,036,622	FactSet (2020)
Sumitomo Mitsui Trust Holdings, Inc.	Japan	Asia	Jul-18	523,371	FactSet (2020)
Swedbank	Sweden	Europe	Sep-18	257,260	FactSet (2019)
Taishin Financial Holdings	Taiwan	Asia	Jan-19	67,750	FactSet (2019)
TD Bank Group	Canada	North America	Oct-17	1,076,798	FactSet (2019)
The Chiba Bank, Ltd.	Japan	Asia	Dec-19	144,597	FactSet (2020)
The Hachijuni Bank, Ltd.	Japan	Asia	Mar-20	94,426	FactSet (2019)
The Hiroshima Bank Ltd.	Japan	Asia	Mar-20	87,431	FactSet (2020)

Name	Location	Region	Endorsement Date	Total Assets (millions, USD)	Source of Asset
The Norinchukin Bank	Japan	Asia	Apr-19	977,090	FactSet (2020)
THE SHIGA BANK, LTD.	Japan	Asia	Jul-18	58,219	FactSet (2020)
The Shizuoka Bank, Ltd.	Japan	Asia	Mar-20	116,185	FactSet (2020)
The Shoko Chukin Bank, Ltd.	Japan	Asia	May-19	103,930	FactSet (2019)
The Toho Bank, Ltd.	Japan	Asia	Feb-20	55,771	FactSet (2020)
Türkiye Garanti Bankası A.Ş.	Turkey	Asia	Jun-17	72,122	FactSet (2019)
UBS Group	Switzerland	Europe	Jun-17	972,183	FactSet (2019)
UniCredit S.p.A.	Italy	Europe	Nov-19	960,464	FactSet (2019)
United Overseas Bank	Singapore	Asia	Oct-19	300,754	FactSet (2019)
Van Lanschot Kempen	Netherlands	Europe	Sep-18	16,073	FactSet (2019)
Vancity	Canada	North America	Jan-20	17,086	Vancity Annual Report (2019)
Wells Fargo & Company	United States	North America	Nov-19	1,918,796	FactSet (2019)
Westpac	Australia	Oceania	Dec-17	611,935	FactSet (2019)
YES BANK	India	Asia	Dec-17	34,082	FactSet (2020)

Information sources for firms

For all identified banks, the following materials were reviewed for TCFD reference (2017-2020):

- a. Annual Reports: annual reports detailing financial performance, governance disclosure, and management review.
- b. Integrated reports: reports that combined financial information and non-financial information and follow the standard International Integrated Reporting Council guidelines.
- c. Non-financial reports: reports that describe a broad range of non-financial disclosures and describe the social contribution of the organisation.
- d. Sustainability reports: reports on Corporate Social Responsibility (CSR), Environmental Social Governance (ESG), which describe social, environmental and/or governance-related issues.
- e. Standalone climate-related financial disclosure reports: in some cases, banks have produced standalone reports for climate-related financial disclosures.

Regional banking sector size as measured by total assets

Market sizes are estimated to help obtain an understanding of market penetration. Therefore, actual numbers may vary, and will either be slightly lower or slightly higher than the numbers referenced in the tables below.

To support the analysis, banks have been categorised by asset size:

Bank Categorisation (our definition)	Total Asset Size (USD billion)
Large	>500
Medium	50-500
Small	<50

Whilst most banks in the study can be considered large, having more than USD 50 billion in total assets, for the purpose of analysis the population has been split to distinguish between the extremely large (greater than USD 500 billion), which tend to be globally systemically important banks; large (USD 50-500 billion), which tend to be at least national systemically important banks (even in developed financial markets); and other (smaller than USD 50 billion).

The table below details the regional estimates used for this report (banking assets based on global assets owned by the banks with head office domiciled in the relevant region).

Region	Banking Assets (USD trillion)	Source
Asia	55.0	Oliver Wyman (2017)
Europe	30.5	European Banking Study (2018)
North America	25.7	Federal Reserve Bank of New York (2019); Gobierno de Mexico (2018); Bank of Canada (2017)
Other	36.8	Residual Estimate
Total	148	DBRS (2019)

List of banks in Top 100³¹ that do not endorse TCFD (in alphabetical order)

Name	Total assets (USbn)	Country	Region
Agricultural Bank of China	3,573.0	China	Asia
Banco do Brasil	365.5	Brazil	South America
Banco de Sabadell ³²	251.1	Spain	Europe
Bank of Beijing	375.0	China	Asia
Bank of China ³³	3,270.2	China	Asia
Bank of Communications	1,422.6	China	Asia
Bank of Jiangsu	296.6	China	Asia
Bank of Shanghai	306.0	China	Asia
Caixa Econômica Federal	321.7	Brazil	South America
Capital One	390.4	US	North America
China CITIC Bank	904.0	China	Asia
China Construction Bank	3,653.1	China	Asia
China Everbright Bank	679.8	China	Asia
China Guangfa Bank	343.3	China	Asia
China Merchants Bank	1,065.3	China	Asia
China Minsheng Bank	959.6	China	Asia
China Zheshang Bank	258.6	China	Asia
Crédit Mutuel	976.1	France	Europe
DZ Bank	627.3	Germany	Europe
Erste Group	275.7	Austria	Europe
Groupe BPCE	1,501.6	France	Europe
Hana Financial Group	365.1	South Korea	Asia
Hua Xia Bank	422.7	China	Asia
Industrial Bank (China)	976.8	China	Asia
Industrial Bank of Korea ³⁴	275.5	South Korea	Asia
La Banque Postale ³⁵	304.9	France	Europe
Landesbank Baden-Württemberg	288.0	Germany	Europe
NongHyup Bank	369.9	South Korea	Asia
Ping An Bank ³⁶	565.7	China	Asia
Postal Savings Bank of China	1,467.3	China	Asia
Qatar National Bank	259.5	Qatar	Asia

31 38 Top 100 banks and total assets as per S&P Global Market Intelligence Report (S&P, 2020). List of banks not endorsing as of June 5th, 2020 as per TCFD supporters directory (TCFD, 2020).

32 Banco de Sabadell endorsed TCFD in Nov 2020, after the cut-off date for our analysis.

33 Bank of China endorsed TCFD in Feb 2021, after the cut-off date for our analysis.

34 Industrial Bank of Korea endorsed TCFD in late June 2020, after the cut-off date for our analysis.

35 La Banque Postale Asset Management business endorsed TCFD in Sept 2018 but the banking group did not.

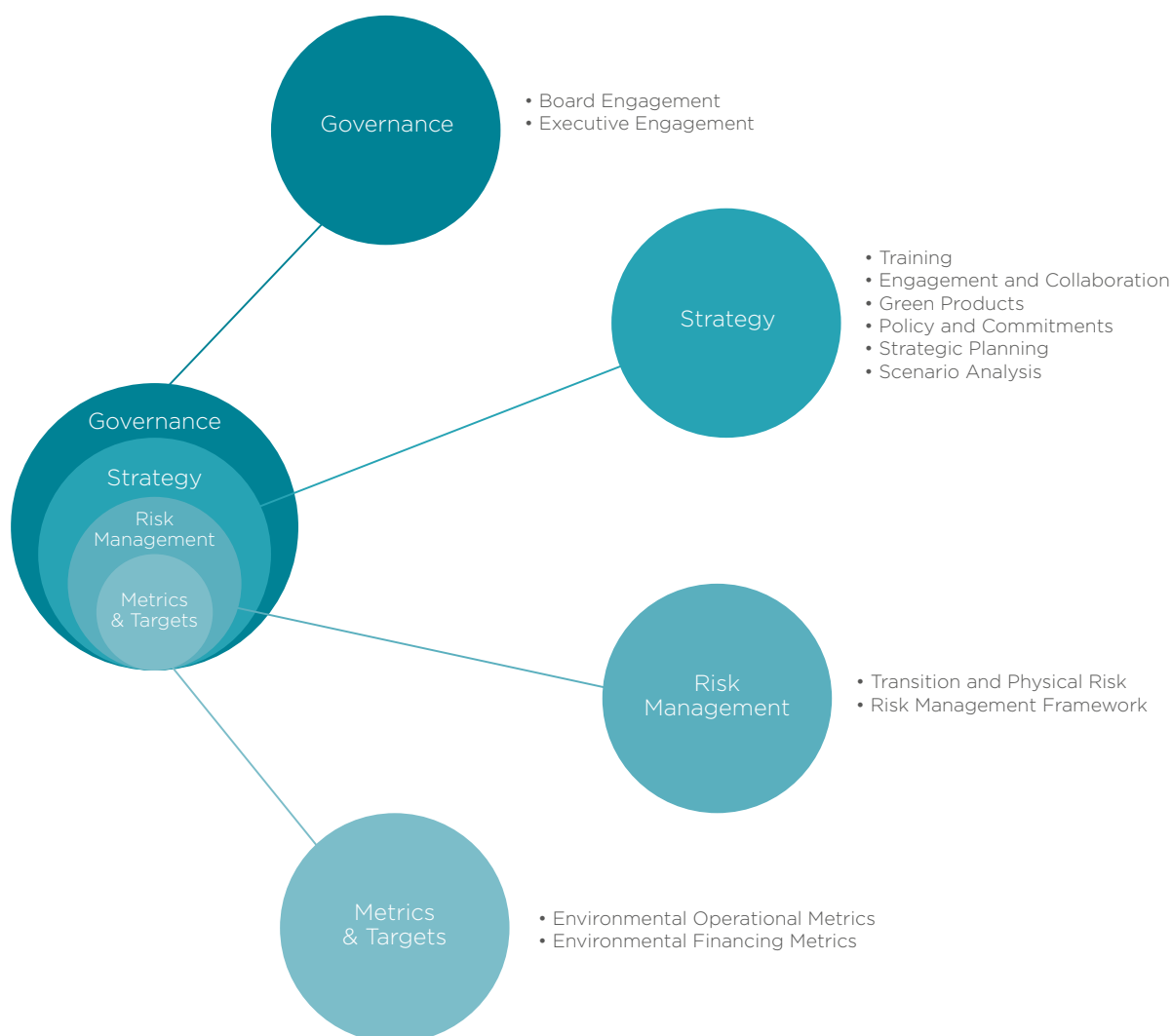
36 Ping An Insurance (parent) endorsed TCFD in March 2021, after the cut-off date for our analysis.

Name	Total assets (USbn)	Country	Region
Raiffeisen Gruppe	256.4	Switzerland	Europe
SberBank of Russia	482.5	Russia	Asia
Shanghai Pudong Development Bank	950.0	China	Asia
State Bank of India	561.5	India	Asia
Truist Financial Corp	473.1	US	North America
U.S. Bancorp	495.4	US	North America
Woori Bank ³⁷	313.5	South Korea	Asia

Data categorisation

All the information collated from TCFD disclosures was documented by year of disclosure and status (ongoing, implemented, and future) and categorised into disclosure themes. All disclosures were mapped to the TCFD recommendations as illustrated below.

Maturity assessment



BCS Consulting developed a maturity assessment methodology to evaluate progress in the disclosures based on 12 questions across the four TCFD categories. All banks were rated in each category against the methodology and total results for the industry per theme (% of banks not started, beginner, intermediate and advanced stage for each assessment question) have been produced for this report. The assessment methodology is as follows:

#	Section	Category	Progress	Description
1	Governance	Board engagement	Board oversight	Committee in place to provide oversight of risks and opportunities
1	Governance	Board engagement	Board roles and responsibilities	Description of specific roles and responsibilities of the board in relation to climate change
1	Governance	Board engagement	Board action	Evidence of specific reviews, decisions carried by the board in regard to climate risk during the year
2	Governance	Executive engagement	Executive oversight	Committee in place to provide oversight of risks and opportunities
2	Governance	Executive engagement	Executive roles and responsibilities	Description of specific roles and responsibilities of the executive committee
2	Governance	Executive engagement	Executive action	Evidence of specific reviews, decisions carried by executives in regard to climate risk during the year
3	Strategy	Green products	Development	Developing green products
3	Strategy	Green products	Release	Released product suite, new offering
3	Strategy	Green products	Reporting	Metrics of green reporting and or targets
4	Strategy	Training	Development	Training plans
4	Strategy	Training	Release	Description of specific teams being trained
4	Strategy	Training	Mature reporting	Metrics of training conducted and or targets
5	Strategy	Policy and commitments	Position review	Commitment to review position, policies, etc.
5	Strategy	Policy and commitments	Internal emissions	Evidence of policy amendments
5	Strategy	Policy and commitments	Lending impact	Lending targets in high impact sectors + policy amendments
6	Strategy	Engagement and collaboration	Global initiative endorsement	Endorsement of Equator Principles, SDGs, Principles for Responsible Banking, Paris Agreement, PRI, etc.
6	Strategy	Engagement and collaboration	External or internal collaboration	Above + Evidence of internal collaboration (e.g. creation of inter discipline forum, research team) or external collaboration (e.g. partnership with other organisation)
6	Strategy	Engagement and collaboration	External and internal collaboration	Both internal and external collaboration evidence + endorsement of global initiatives

#	Section	Category	Progress	Description
7	Strategy	Strategic planning	Vision	Identification of short-, medium-, and long-term horizons in consideration of the assets and infrastructure of the organisation
7	Strategy	Strategic planning	Design	Description of specific climate-related issues for each time horizon that could have a material impact for the organisation
7	Strategy	Strategic planning	Implementation	Evidence that these issues are integrated in financial strategy and risk as well as opportunity prioritisation (e.g. costs, revenue, capital expenditures, product offering, adaptation and mitigation activities, supply chain etc.)
9	Strategy	Scenario analysis	Vision	Commitment to complete scenario analysis and enhance stress testing capabilities
9	Strategy	Scenario analysis	Design	Development of specific scenarios (e.g. 2, 4 degrees, etc.), sector shocks and evidence of specific techniques, e.g. carbon price calculation in rate of return and/or disclosure credit portfolio in high impact sectors (e.g. exposure disclosure)
9	Strategy	Scenario analysis	Implementation	Disclosure of quantitative outputs such as expected impairments (credit costs) / profit and loss (P&L) net impact and / or capital impact
8	Risk management	Transition and physical risk	Vision	Objective to assess clients' impact on climate change agenda (e.g. physical risk, transition risk, etc.)
8	Risk management	Transition and physical risk	Design	Evidence of measurement approach and methodologies discussed for management of these risks
8	Risk management	Transition and physical risk	Implementation	Adoption of climate risk considerations in credit risk processes (e.g. annual renewal of internal rating, risk factor modelling, customer thermal coal utilisation, transition risk rating development, etc.)
10	Risk management	Risk management framework	Vision	Reference to consideration of ESG factors in screening process
10	Risk management	Risk management framework	Design	Embedding of climate risk into processes and standards
10	Risk management	Risk management framework	Implementation	Description of specific monitoring tools used (e.g. cross sector specific policies, specific credit and rating policies, ESG screening tool reference, EMS system, etc.)
11	Metrics and targets	Environmental operational metrics	Vision	Currently developing measurement tools
11	Metrics and targets	Environmental operational metrics	Design	Targets and / or description of mitigation initiatives (e.g. purchasing of renewable energy, water consumption, air travel, etc.)
11	Metrics and targets	Environmental operational metrics	Implementation	Previous point + Reporting CO ₂ metrics and or materiality assessment of key drivers of internal footprint impact or carbon neutral status
12	Metrics and targets	Environmental financing metrics	Vision	Currently developing measurement tools

#	Section	Category	Progress	Description
12	Metrics and targets	Environmental financing metrics	Design	Targets or plans for risk metrics (e.g. integrating CO ₂ measurement in funds, etc.) and / or disclosure of sustainable finance metrics (e.g. total sustainable financing, revenues, etc.)
12	Metrics and targets	Environmental financing metrics	Implementation	Evidence of environmental risk measurement (e.g. measure of balance sheet and credit-risk weighted assets across fossil fuel sectors, etc.) and sustainable financing metrics

e. References and Data Sources

Please visit www.bcsconsulting.com/TCFD2020 for full list of references and data sources.

“To achieve our global climate ambitions, high quality, decision-useful climate information is required for investors and other decision-makers. The report highlights important progress in the sector, but it also shows us how TCFD capabilities can be enhanced to meet this requirement”

Mardi McBrien

Managing Director, Climate Disclosure Standards Board (CDSB)

“Banks need to address climate risk now to remain resilient in the future. This report highlights the work still required across the sector and provides practical advice for banks to improve and meet the ambition of the TCFD framework”

Jo Paisley

Co-President, GARP Risk Institute

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