Standard Chartered PLC
Climate-related Financial Disclosures Report 2021

The places we call home are the world's most dynamic markets, setting the pace for global growth. The people and businesses we serve, connect and partner with are the engines of the new economy – of trade and innovation – and are central to the transition to a fair and sustainable future.

Our purpose is to drive commerce and prosperity through our unique diversity. This infuses everything we do, connecting our strategy with opportunities to drive growth and deliver our societal ambitions.

To help us deliver our purpose, we have defined three areas where we have long-term ambitions: Accelerating Zero, Lifting Participation and Resetting Globalisation. Representing some of the biggest societal challenges of our time, these 'Stands' are not separate from our strategy, but integral to delivering and accelerating it – stretching our thinking, action and leadership.

The world needs to reach net zero by 2050 or face a climate catastrophe, with increasing extreme weather events and climate-induced migration.

At Standard Chartered, we have a longstanding commitment to address the impacts of climate change and do our part to accelerate the transition to a low-carbon economy. Underpinned by our sustainability philosophy, we manage our climate impact through three key pillars: accelerating sustainable finance, reducing our direct and financed emissions, and managing the financial and non-financial risks from climate change.

(+) Further information on our approach to Sustainability can be found in our 2021 Annual Report.

Unless another currency is specified, the symbol '$' in this document means US dollar.

Contents

Foreword

Bill Winters
Group Chief Executive

We've made great progress but a lot more remains to be done. Delivering the net-zero transition will be incredibly hard work. Our actions will need to speak louder than our words, giving the crisis the level of urgency it deserves.

I am delighted to share our fourth Taskforce on Climate-related Financial Disclosures (TCFD) report with an enhanced level of disclosure, demonstrating an evolution in our response to climate change and the management of Climate Risk.

We are leveraging our unique footprint across Asia, Africa and the Middle East to positively impact environmental outcomes through our financing decisions. We see enabling a just transition in these regions as our mission, as we collectively work towards a global net-zero economy.

2021 was a year in which climate change dominated the public agenda; I could not be prouder of the efforts we have made to deliver, and extend, our response. We announced our net-zero roadmap setting out plans to cut financed emissions, mobilise capital, and accelerate climate solutions to reach net zero by 2050. This roadmap was informed by the Science Based Target initiative (SBTi) and the Net Zero Banking Alliance (NZBA), and we have set out our approach in a detailed white paper in the hope this will help others and contribute to collective progress.

We have a plan to mobilise USD300 billion in green and transition financing by 2030, to help our clients set and reach net-zero targets. We are also clear that where clients do not show a sufficient level of commitment to the transition, we intend to reduce or eliminate the financial services we provide. We will continue to play our part in reducing the most harmful activities, seeking to reduce absolute financed thermal coal mining emissions by 85 per cent by 2030 alongside our long-standing commitment to not provide any direct financing to coal-power projects.

While focusing on our financed emissions, we have continued to support this with action in areas where we have greatest control. We have accelerated our approach to net zero in our operations and we are on track to achieve this in 2025, five years ahead of our original plans. As we continue to reduce our emissions, we are compensating for those that remain with a mixture of high-quality carbon credits.

We continue to build on our Climate Risk management capabilities and in 2021 we have significantly strengthened our skills and expertise in this key area.

Our focus on integrating climate and sustainability into the Group's decision making means we must upskill our colleagues. In 2022 we will be launching a bank-wide sustainability learning programme alongside more specialised sustainable finance modules for subject matter experts.

We've made great progress but a lot more remains to be done. Delivering the net-zero transition will be incredibly hard work. Our actions will need to speak louder than our words, giving the crisis the level of urgency it deserves.

We look forward to working in partnership with all our stakeholders to lead the way and safeguard our shared future.

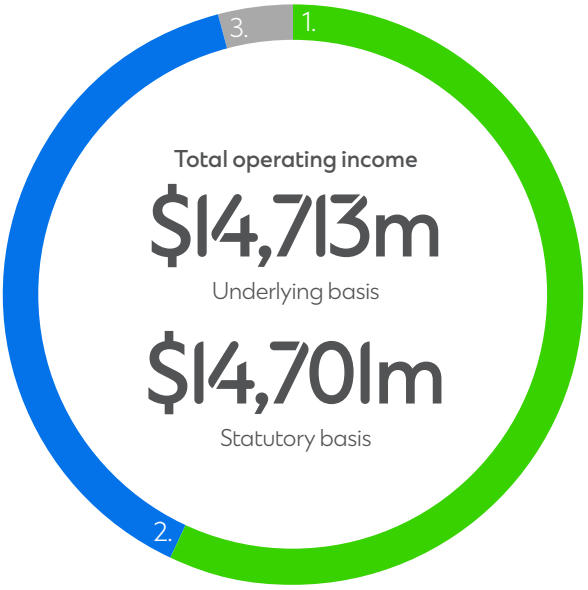
Bill Winters
Group Chief Executive

17 February 2022

Who we are and what we do

Our purpose is to drive commerce and prosperity through our unique diversity. We serve two client segments in three regions, supported by nine global functions.

Our client segments



1.

Corporate, Commercial and Institutional Banking

Corporate, Commercial and Institutional Banking supports clients with their transaction banking, financial markets, corporate finance and borrowing needs across 49 markets, providing solutions to more than 22,000 clients in some of the world's fastest-growing economies and most active trade corridors.

Operating income

$8,407m
Underlying basis

$8,416m
Statutory basis

2.

Consumer, Private and Business Banking

Consumer, Private and Business Banking serves more than 9 million individuals and small businesses, with a focus on the affluent and emerging affluent in many of the world's fastest-growing cities.

Operating income

$5,733m
Underlying basis

$5,733m
Statutory basis

3. **Central and other items**

Operating income

$573m
Underlying basis

$552m
Statutory basis

Guiding and supporting our businesses

Global functions

Our client-facing businesses are supported by our global functions, which work together to ensure the Group's operations run smoothly and consistently.

Human Resources
Maximises the value of investment in people through recruitment, development and employee engagement.

Legal
Enables sustainable business and protects the Group from legal-related risk.

Technology & Innovation
Responsible for the Group's systems development and technology infrastructure.

Risk
Responsible for the overall second line of defence responsibilities related to risk management, which involves oversight and challenge of risk management actions of the first line.

Operations
Responsible for all client operations and ensures the needs of our clients are at the centre of our operational framework. The function's strategy is supported by consistent performance metrics, standards and practices that are aligned to client outcomes.

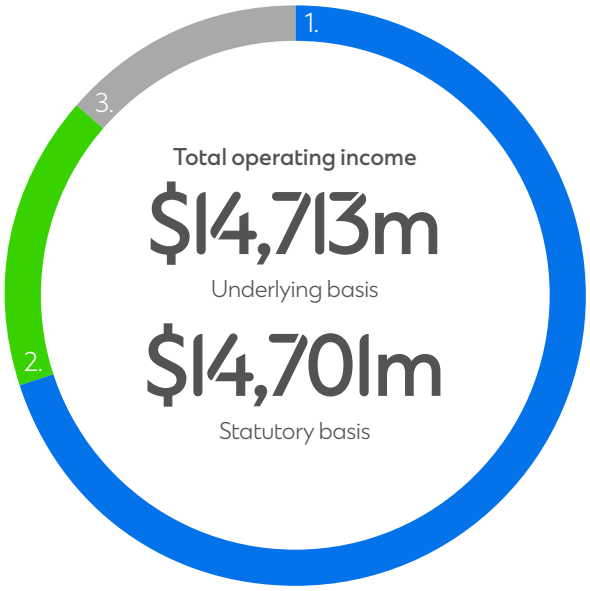
Group Chief Financial Officer
Comprises seven support functions: Finance, Treasury, Strategy, Investor Relations, Corporate Development, Supply Chain Management and Property. The leaders of these functions report directly to the Group Chief Financial Officer.

Corporate Affairs, Brand and Marketing
Manages the Group's communications and engagement with stakeholders in order to protect and promote the Group's reputation, brand and services.

Group Internal Audit
An independent function whose primary role is to help the Board and Executive Management to protect the assets, reputation and sustainability of the Group.

Conduct, Financial Crime and Compliance
Delivering the right outcomes for the Bank, its clients and communities by partnering internally and externally to achieve the highest standards in conduct and compliance in order to enable sustainable business and fight financial crime.

Our regions



1.

Asia

We are present in 21 markets across Asia, including some of the world's fastest-growing economies. Hong Kong and Singapore are the highest income contributors.

Operating income

$10,448m
Underlying basis

$10,478m
Statutory basis

2.

Africa and Middle East

Present in 25 markets, of which the most sizeable by income are the United Arab Emirates, Nigeria and Kenya.

Operating income

$2,446m
Underlying basis

$2,449m
Statutory basis

3.

Europe and the Americas

Centred in London, with a growing presence across continental Europe, and New York, with presence in both North America and several markets in Latin America. A key income generator for the Group.

Operating income

$2,003m
Underlying basis

$1,973m
Statutory basis

4. **Central & other items**

Operating income

$(184)m
Underlying basis

$(199)m
Statutory basis

Overview

This report , our fourth since 2018, includes climate-related disclosures to align with the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD), TCFD published guidance and the Financial Conduct Authority Listing Rules.

Using the most reliable available data, this report is intended to provide a transparent account of our climate action toward net zero in both our financing and our operations. It aims to build trust and provide our investors with a better understanding of the implications of climate-related risks and opportunities for our businesses, strategy, financial planning, governance and risk management.

The data we have used provides the best available approach to making progress, notwithstanding the challenges that exist given the incompleteness and novelty of the data sets and methodologies required. We expect the availability and reliability of required data to improve over time, and we intend to integrate applicable improved data into our reporting as it becomes available.

Figure 1: Summary of our TCFD Report

Governance		
Board oversight of climate-related risks and opportunities	**Current status** • In 2021, we held Board-level and Management Team training on our approach to net zero and Board-level training, delivered by Imperial College London, on climate scenarios to support the Board with their review and challenge of climate related regulatory stress testing. • The Board reviewed and approved our approach to reaching net zero carbon emissions from our financing by 2050 and associated interim targets. • The Board received regular Climate Risk updates via the Board Risk Committee (BRC) and reports from the Group Chief Risk Officer. • First-generation Climate Risk reporting and Management Level Risk Appetite metrics were shared with the BRC and approved by the Group Risk Committee which has oversight of Climate Risk.	**Future priorities** • We aim to enhance Climate Risk training to our subsidiary boards, building on initial training delivered in 2020. • Results of management stress tests will be reviewed and challenged by the BRC and will strengthen the Board's oversight of the impact from Climate Risk on our business, financial performance and operations and strengthen business strategy and financial planning.
Management's role in assessing and managing climate related risks and opportunities	**Current status** • The Group Chief Risk Officer (CRO) has Senior Management Responsibility for Climate Risk and is supported by the Global Head, Enterprise Risk Management who has day-to-day oversight, and has appointed the Climate Risk Management Forum that oversees the delivery of the Group's commitment to manage climate related financial and non-financial risks. • In 2021, we established a robust governance structure to support our net-zero approach through the Net Zero Steering Group chaired by the Group Head, Conduct, Financial Crime & Compliance. • We aim to strengthen business segment, country, and regional Climate Risk governance and continue to keep the Management Team updated through the Group CRO reports and Management Information report to the GRC.	**Future priorities** • We will continue to exercise appropriate oversight and governance of our approach to net zero at Board and Management Team level. • We aim to strengthen business segment, market, and regional Climate Risk governance and continue to keep the Management Team updated through the Group CRO reports and Management Information report to the GRC.

Strategy

Climate-related risks and opportunities identified over the short, medium and long term	**Current status** • We have assessed the impact of Climate Risk to the banking book under three transition scenarios over a 30-year time horizon, which has enabled us to identify climate risks, strategies to mitigate risk as well as climate opportunities. • In 2021, we identified climate-related opportunities linked to the Bank's net zero in financed emissions approach including aiming to: – mobilise $300 billion in green and transition finance – reduce absolute financed thermal coal mining emissions by 85% – reduce emissions intensity in other high carbon sectors with the interim 2030 targets including power (-63% emissions intensity), steel and mining (– 33% emissions intensity respectively), and oil and gas (-30% emissions intensity). • We use quantitative and bottom up tools and methodologies to assess transition and physical Climate Risk and we apply these to our clients, portfolios, and our own operations.	**Future priorities** • We will continue to develop and enhance our Climate Risk/opportunity identification, interplay and modelling capabilities to strengthen Climate Risk quantification. This includes consistency and where possible, uniformity of time horizons. • We aim to disclose annually the progress we are making against our $300 billion and other net-zero targets and build out our client capability to achieve our net zero through: – our newly developed Transition Acceleration Team – reporting mortgage emissions with a view to setting targets by 2023 – doubling our sustainable investing assets under management – launching and growing sustainable products including Universal Climate Finance Loans, green mortgages and sustainable investing offerings while integrating ESG considerations in our wealth management advisory activities.
Impact of climate risks and opportunities on business, strategy and planning	**Current status** • Sustainability has been elevated to become a pillar of the Group's strategy. • We continue to restrict financing of thermal coal mining and reduce emissions intensity in other carbon intensive sectors. Where clients do not show a sufficient level of commitment to the transition, we reserve the right to cease providing them with our services. • In 2021, we engaged with approximately 2,000 of our clients, to help understand their exposure to Climate Risk and identify climate opportunities. • To make our business model more resilient to Climate Risk we are already reducing appetite for selected high-carbon sectors such as coal, in support of our plan to reach net zero in our financing by 2050, whilst balancing Transition Risk and opportunity with ambitious interim targets to substantially reduce our financed carbon emissions intensity by 2030.	**Future priorities** • We will develop Climate Risk management scenarios, which will further inform us of the potential impact from Climate Risk on our business, financial performance and operations and strengthen business strategy and financial planning.
Climate-related scenario analysis	**Current status** • Our climate-related scenario analysis, based on those from the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), includes orderly, disorderly and hot-house world scenarios.	**Future priorities** • We will develop management scenarios that will strengthen considerations of Climate Risk in into the Group's corporate plan and net-zero strategy.

Risk management		
Identifying and assessing climate-related risks	**Current status** • We identify physical and Transition Risk as part of client, portfolio and own property assessments and consider: – Physical Risk: current day and longer term time horizons for acute weather events (storm, flood, wildfire, earthquakes) and chronic sea level rise. – Transition Risk: financial impact at a client level under a range of NGFS based scenarios. – Temperature alignment: provides a temperature score to indicate client and portfolio level global warming potential up to 2030. • Climate Risk is recognised in our central Enterprise Risk Management Framework (ERMF) as an integrated risk type and is managed in-line with the Principal Risk Type (PRT) impacted e.g. Credit, Market, Operational. • Climate Risk is assessed as part of regulatory stress testing through the annual Internal Capital Adequacy Assessment Process (ICAAP), the 2021 Bank of England Climate Biennial Exploratory Scenario (CBES), and local country regulatory stress tests. • In 2021 client engagement has improved the coverage of data that informs the climate client level risk assessments being integrated into the credit underwriting process.	**Future priorities** • Further embedding of Climate Risk management across PRTs, consideration of risk mitigation over time as methodologies mature and expanding coverage across products and markets.
Managing climate-related risks	**Current status** • Climate Risk is managed in accordance with the Principal Risk Type (PRT) through which it manifests. Depending on the PRT framework, it is applied at a client, location or portfolio level as part of transactional, portfolio or operational level analysis for prioritised areas. • There is a Risk Appetite (RA) Statement that is accompanied by RA metrics that are based on potential losses under different climate scenarios and these RA metrics are reported to the GRC.	**Future priorities** • Risk Appetite thresholds become effective in 2022.
Integrating into the organisation's overall risk management	**Current status** • Climate Risk is integrated into and managed as part of existing PRTs: – Credit Risk: Climate Risk (physical and transition) assessments are being incorporated into the credit underwriting process for CCIB clients. For our CPBB sector, Physical Risk considerations inform credit portfolio quarterly reviews for over 90% of the retail mortgage portfolio. – Operational and Technology Risk: all new property sites are assessed for Physical Risk vulnerabilities. – Traded Risk: a Physical Risk-based scenario is included as part of the Traded Risk stress testing framework. – Country Risk: the setting of Country Risk limits include Climate Risk as a factor and regional Country Risk reviews for sovereign credit grades continue to include Climate Risk considerations. – Reputational and Sustainability Risk: for prioritised high-carbon clients and transactions a Climate Risk overlay assessment is applied (in addition to Environmental and Social Risk Management and restrictive policies). – Compliance: a process has been established for tracking various Climate Risk-related regulations. – Treasury Risk: Climate Risk was considered as part of the 2020 and 2021 ICAAPs.	**Future priorities** • Continue to embed Climate Risk considerations within PRTs, including expanding CCIB coverage.

Metrics and Targets

	Current status	Future priorities
Metrics used to assess and manage climate-related risk and opportunities in line with strategy and risk management processes	• Early stage risk management metrics are used for quantifying transition and Physical Risk at a client and portfolio level, and for our own operations. These are used for different processes such as regulatory stress testing, monitoring Climate Risk as part of Risk Appetite reporting, and to inform the assessments being integrated into existing transactional risk processes and client reviews. Some metrics we use include: – financial impact of various transition scenarios up to 2050, expressed as weighted average probability of default – outstanding exposure of retail mortgage portfolios to current and forward looking Physical Risk events (flooding, storm, wildfire, future sea level rise) – percentage of our own offices, branches and data centres in locations at extreme gross Physical Risk events – Country-Climate Risk index ranking countries by physical and Transition Risk. • In 2021, we expanded our disclosures to include: – the financial impact on exposure to high-carbon sectors loans and advances.	• Continue to refine and enhance coverage and application of Climate Risk related metrics as our tools and methodologies mature, with a greater focus on developing internal climate modelling capabilities and assessing the implications of an internal carbon price where possible.
Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas emissions and the related risks	• Our 2021, our Scope 1 emissions were 2,902 tonnes carbon dioxide equivalent (tCO_2e), a reduction of 27 per cent from 2020, and Scope 2 emissions were 82,761 tCO_2e, a reduction of 27 per cent from 2020. • In 2021, our Scope 3 air travel emissions were 3,654 tCO_2e, a reduction of 89 per cent from 2020. • In 2021, we baselined and estimated our 2020 Scope 3 supply chain emissions (vendors), using spend data. As a result of this exercise we estimate these emissions as 365,911 tCO_2e. • We measured the absolute financed emissions baseline of our corporate lending portfolio as of 2020-year end, focusing on $74.8 billion of assets (equating to a coverage of 77 per cent of our in-scope assets of $97.3 billion, equal to 45.2 million metric (Mt) CO_2e). There is currently insufficient available data to accurately reflect the financed emissions of the remaining 23 per cent of our in-scope assets. A linear extrapolation would translate to an overall baseline of up to approximately 59Mt CO_2e. • In 2021, we offset our Scope 1-3 (flights and data centres) through high quality and verifiable carbon credits at a cost of $7.65/tonne.	• We will continue to extend our Scope 3 financed emissions measurement capabilities, targeting additional sectors and incorporating additional financial products as methodologies allow. For 2022, a specific priority will be baselining the emissions from our residential mortgage lending.
Targets used by the organisation to manage climate related risks and opportunities and performance against targets	• We have continued to evolve and challenge our existing Sustainability Aspirations including setting interim and long-term targets to reach net zero in our operations by 2025 and net zero in our financed emissions by 2050. • In 2021, we facilitated $9.6 billion towards sustainable infrastructure and $22 billion towards renewable energy services. • In 2021, metrics and targets developed and disclosed include: – plan to mobilise $300 billion aligned to our Green and Sustainable Product Framework and Transition Finance Framework – measuring, managing and reducing emissions associated with our financing of clients to support our objective to achieve net zero by 2050.	• We will annually disclose against our 2050 net zero in financing targets. • We will continue to drive consistency of use of targets across the Group's functions and build our knowledge of the interrelation between targets.

Governance

Robust governance underpins everything we do. Climate change and its associated risks, opportunities and organisational implications are overseen by Standard Chartered PLC's (the Group's) Board, Management Team and multiple supporting sub-committees.

In this section

Governance

The structure of the Group's Board and Management Team can be found on pages 91 to 97 of the 2021 Annual Report.

Standard Chartered PLC Board

The Board is responsible for the long-term success of the Group, and its supporting committees consider climate-related risks and opportunities when reviewing and guiding strategic decisions. The Board Risk Committee (BRC) oversee the progress against the Group's Climate Risk workplan and risk reporting metrics. The BRC approves annually and has oversight over items such as the Climate Risk Appetite Statement (RAS), which informs the Group RAS approved by the Board, climate stress testing and Climate Risk reporting metrics.

Throughout 2021, Board activities have focused on reviewing and guiding strategic decisions on our approach to reach net zero financed emissions by 2050. In October 2021, our pathway with interim and long-term targets was endorsed by the Board prior to publication externally.

Management Team

Led by Group Chief Executive Bill Winters, our Group Management Team comprises of representatives from across all geographies, business segments and functions. In 2020, sustainability became a pillar of the Group's strategy.

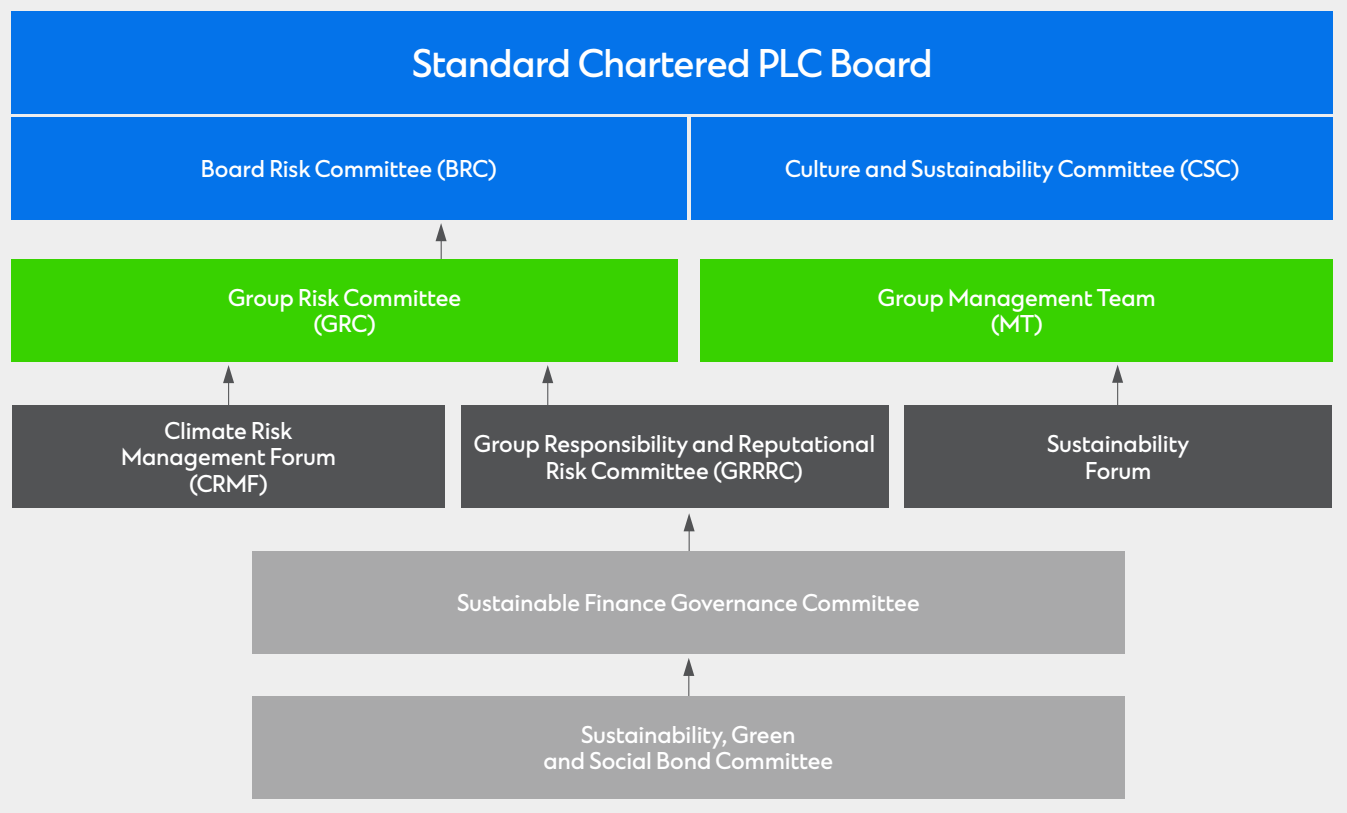
Each member is responsible for strategically driving climate considerations within their geography, business segment or function in pursuit of our three-part climate approach: accelerating sustainable finance, reducing our direct and financed emissions, and managing the financial risks from climate change (Figure 6). This includes regular progress updates on our approach to net zero in our operations and how we will achieve net zero in our financing, while at the same time reporting progress against meeting regulatory expectations for managing Climate Risk and climate stress testing.

In response to the Prudential Regulation Authority's (PRA's) Supervisory Statement 3/19, 'enhancing banks' and insurers' approaches to managing the financial risks from climate change',[1] responsibility for identifying and managing financial risks from climate change sits with the Group Chief Risk Officer (CRO) as the appropriate Senior Management Function (SMF) under the Senior Managers Regime (SMR). The Group CRO is supported by the Global Head, Enterprise Risk Management who has day-to-day oversight and central responsibility for the Group's second line of defence against Climate Risk.

Governance committees and steering groups

Several committees within the Group support the Board and Management Team on the management and monitoring of climate change and its associated impacts. Details of their responsibilities for reviewing climate-related issues are set out as shown in Figure 3.

Figure 2: Structural overview of Standard Chartered PLC's governance



Refer to the Governance and remuneration report in the 2021 Annual Report and Accounts for further details on our 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

Figure 3: Governance committees and steering groups with responsibility for climate-related issues

Governance body	Chair	Climate-related agenda frequency	Purpose and responsibilities related to climate-related issues	Climate-related topic 2021
Board	Standard Chartered PLC Group Chairman	Ad hoc.	• Oversee the Group's overall net-zero approach. • Responsible for the net-zero pathway shareholder advisory vote proposal.	• Approved the Group's approach to net zero. • Discussed and reviewed the Group's net-zero pathway. • Discussed and reviewed the progress on delivery and methodology of the Group's approach to reach net zero by 2050. • Took part in Climate Risk training and guest speaker analysis on climate-related matters.
Board Risk Committee (BRC)	Independent non-Executive Director	Three times a year. Climate Risk updates to BRC in Group reports 11 times a year.	• Provide oversight of the Group's key risks on behalf of the Board and is the primary Risk Committee at the Board level that oversees Climate Risk. • Consider the Group's Risk Appetite (RA) and make recommendations to the Board on the Risk Appetite Statement (RAS). • Assess risk types (including Climate Risk) and the effectiveness of risk management frameworks and policies. • Provide oversight and challenge of the design and execution of climate-related stress testing.	• Reviewed and approved the Group's Climate RAS. • The Committee reviewed, discussed and challenged the Group's CBES stress test results, ahead of submission to the BoE. • Reviewed and approved Climate Risk-related management actions. • Review and recommend to the Board Climate RAS.
Culture and Sustainability Committee (CSC)	Independent non-Executive Director	Three times a year.	• Oversee the Group's overall sustainability strategy. • Monitor the development and implementation of the sustainability framework to align with the Group's net-zero approach.	• Reviewed and approved approach to external Environmental, Social and Governance (ESG) benchmarking and indices including those related to climate. • Reviewed and approved progress against the Group's external commitments, Sustainability Aspirations and delivery against key sustainability priorities. • Discussed the development and implementation of the net zero in financing by 2050 approach.
Group Risk Committee (GRC)	Group Chief Risk Officer (CRO)	Three times a year. Climate risk updates in Group CRO reports 11 times per year.	• Ensure the effective management of Group risk in support of the Group's Strategy. • Oversee implementation of the Enterprise Risk Management Framework. • Review risk appetite and approve management team level risk appetite metrics and thresholds for Principal Risk Types (PRT) and integrated risks, including Climate Risk.	• Reviewed the Group's progress against the Climate Risk workplan. • Reviewed scenario expansions approach and detailed methodology for the CBES. • Approved the end CBES results and Climate RA metrics.

Governance body	Chair	Climate-related agenda frequency	Purpose and responsibilities related to climate-related issues	Climate-related topics 2021
Climate Risk Management Forum (CRMF)	Group CRO	Quarterly	• Oversee development and implementation of the Climate Risk framework. • Oversee all aspects of risk management practices for climate related financial and non-financial risks, including leadership and oversight in developing and effectively implementing the Group's Climate Risk management framework. • Provide structured governance around engagement with relevant PRTs impacted by or linked to Climate Risk.	Oversaw delivery of: • Climate stress testing and scenario analysis including the CBES. • Progress associated with integrating Climate Risk into PRTs. • Climate disclosures including this report. • Climate Risk research with Imperial College London. • Regulatory consultations or supervision. • Plans for management information and management actions. • Approach to delivering training and upskilling staff on Climate Risk across the Group.
Group Responsibility and Reputational Risk Committee (GRRRC)	Group Head, Conduct, Financial Crime and Compliance	Monthly	• Oversee and approve climate-related Position Statements including sector-specific transition criteria, and associated risk tolerance thresholds.	• Approved the Climate Risk decision framework for enhanced Climate Risk considerations in Reputational and Sustainability Risk ratings for clients and transactions in high-carbon sectors. • Discussed escalations relating to clients or transactions where Climate Risk has been identified. • Discussed Group-wide net zero and Paris-aligned climate approach.
Sustainability Forum	Group Head Conduct and Financial Crime Compliance	Bi-monthly	• Oversee development and implementation of the Group's vision to be the world's most sustainable and responsible bank. • Guide a co-ordinated Group-wide approach to key sustainability themes, including climate change.	• Reviewed the Group's approach to net zero in operations by 2025 and financing by 2050 and approach to carbon credits. • Reviewed and approved new, existing, and updated Sustainability Aspirations. • Reviewed and approved the approach to the Group's own ESG ratings. • Discussed Group-wide climate internal and external engagement programmes.

Governance body	Chair	Climate-related agenda frequency	Purpose and responsibilities related to climate-related issues	Climate-related topic 2021
Sustainable Finance Governance Committee	Global Head of Sustainable Finance	Monthly	• Provide leadership, governance and oversight in delivering the Group's sustainable finance offerings. • Review and endorse sustainable finance products. • Guide the Group in identifying and embracing opportunities and reviewing the reputational risks relating to sustainable finance including any greenwashing risks on sustainable finance products.	Reviewed and approved: • Sustainable finance products including sustainable deposits, sustainability linked transactions, green finance transactions, sustainable trade finance products, sustainable wealth management products, ESG derivatives, ESG repurchase transactions and green mortgages. • The Group's approach to identifying sustainable and climate products. • The Group's Green and Sustainable Product Framework, encompassing a range of climate finance activities. • The Group's 2021 Transition Finance Framework, and Sustainable Finance Impact Report.
Sustainability, Green and Social Bond Committee	Global Head of Sustainable Finance	Quarterly	• Agree content and implementation of Sustainability Bond Framework. • Guide the Group in identifying and embracing opportunities relating to sustainability, green and social debt issuance.	Reviewed and approved: • Sustainability Bond Framework. • 2021 Sustainable Finance allocation and Sustainable Finance Assets Impact Reports.
Sustainable Finance Steering Committee	Global Head of Sustainable Finance	Monthly	• Provide strategic direction for the Corporate, Commercial and Institutional Banking (CCIB) sustainability agenda.	Discussed: • Sustainable finance trends. • Monitor and track progress of sustainable finance targets. • Coordination and scale of CCIB products, segments, and markets.
Consumer, Private and Business Banking Sustainability Steering Group (CPBB)	Global Head, Client Experience & Strategic Business Enablement and Global Head, Sustainable Finance (co-chair)	Bi-monthly	• Provide the strategic direction for CPBB's sustainability agenda.	• Discussed strategic priorities for CPBB's sustainability agenda including Sustainable Finance offerings and net-zero approach. • Oversaw the execution of CPBB sustainability agenda including targets, benchmarking, progress and reporting. • Embedded sustainability as a core pillar in CPBB business agenda. • Discussed thought leadership and identification of future market leading opportunities.
Net Zero Steering Group	Group Head, Conduct, Financial Crime and Compliance	Monthly	• Agree and oversee the design and implementation of our net zero 2050 financed emissions pathway as part of the Group's sustainability strategy.	Reviewed and approved: • Net zero financed emissions 2050 pathway. • 2030 net zero interim targets for three sectors (Oil and Gas, Power, Metals and Mining). • Net zero methodology including baseline and pathways published in our net zero white paper.

Engaging the external market on climate

Our senior leaders continue to play an active role in climate-related forums including the World Economic Forum's CEO Climate Leaders Alliance and Sustainable Markets Initiative. In 2021 Tracey McDermott, Group Head, Conduct and Financial Crime and Compliance was appointed Net-Zero Banking Alliance Steering Group Chair. Our Group Chairman, José Viñals, was appointed co-Chair of the United Nations' Global Investors for Sustainable Development (GISD) Alliance which has set ambitious objectives to scale up long-term finance and investment in sustainable development.

We increased our formal delegation at COP26, working with partners, including City of London, to showcase our climate capabilities, knowledge and to help influence change.

Attended by our Group Chairman, our Group Chief Executive and key climate experts within the Bank, we participated in 18 events and 35 industry body meetings on a variety of climate topics all live streamed to support access to a global audience.

During 2021 we continued to hold the position of Chair of the Equator Principles Association, and adopted the Poseidon Principles, a global framework for assessing and disclosing the climate alignment of financial institutions' shipping portfolios.

Our Group Chief Executive chaired the Taskforce for Scaling Voluntary Carbon Markets (TSVCM), an international private sector platform set up to identify issues on the existing voluntary carbon market and help it grow to scale. In 2021 the TSVCM formed a new governance body, the Integrity Council for the Voluntary Carbon Markets (IC-VCM), which will focus on developing a high quality international carbon market. We have been an integral player in the set-up of the IC-VCM, and will remain involved in the development and trading of carbon markets around the world. Chris Leeds, Head of Carbon Markets Development, is a Board member and our Group CEO sits on the Distinguished Advisory Group.

Case study

Our research on how climate is shaping commerce

In 2021 we launched two studies. Zeronomics looked at how to finance a net zero world and Carbon Dated examined how major multinational companies (MNCs) are working with their supply chain partners, notably in emerging markets, to reduce carbon emissions.

Zeronomics: financing the transition to a net zero world

Launched in March 2021, Zeronomics surveyed the senior leadership of 250 large companies and 100 investment specialists. The report found that 55 per cent of business leaders believe their companies are not transitioning fast enough to reach net zero by 2050 – and carbon-intensive industries and companies based in emerging markets are struggling most with the transition.

In line with this study, our 2021 Sustainable Finance Impact Report showed that 84 per cent of Sustainable Finance Assets are concentrated in Asia, Africa and Middle East (AAME) regions which do not receive sufficient sources of capital. The report also highlights the fact that our green assets in least developed, lower and lower middle income countries (as defined by the Organisation for Economic Co-operation and Development's Development Assistance Committee) have achieved significantly more impact in terms of CO_2 emissions avoided per dollar invested, compared to our green assets located in the rest of the world.

The findings emphasised our opportunity to keep finance flowing to where it matters most and has the greatest impact – namely the markets we call home.

Read the full report here

Carbon Dated: the net zero supply chain revolution

Our Carbon Dated report, released in June 2021, revealed the opportunities and threats that net zero transition poses to emerging market suppliers. Carbon Dated revealed that MNCs are planning to stop using suppliers who are not decarbonising fast enough, expecting to exclude 35 per cent of their current suppliers as they transition away from carbon.

Carbon Dated found that suppliers based in 12 key emerging markets could benefit from $1.6 trillion of export opportunities if they reduced their carbon emissions and continue to work with their MNC partners. Suppliers will gain better prices and preferential status, with MNCs likely to pay up to 7 per cent extra for sustainable goods and services. In addition, 18 per cent of MNCs are offering grants or loans to their suppliers to invest in reducing emissions from their operations.

Read the full report here

Assessing and managing climate within our business

We have three dedicated teams managing climate related-risks and opportunities within our business.

1. Group Sustainability develops our sustainability strategy and supports our stakeholder outreach
2. Sustainable Finance manages climate and transition finance opportunities
3. The Climate Risk team manages climate-related risks

1. Group Sustainability

Sitting within Corporate Affairs, Brand and Marketing and set to move in 2022 under the newly created Chief Sustainability Officer, the team manages the overall Group sustainability strategy including external disclosures. To help support the Group's strategic direction, team members actively participate in industry platforms and initiatives. The team acts as Secretariat to the Sustainability Forum helping shape the direction of the Group's action on climate.

2. Sustainable Finance

We have two client segments; Corporate, Commercial and Institutional Banking (CCIB) and Consumer, Private and Business Banking (CPBB) supporting climate related-risks and opportunities.

To support all our Sustainable Finance endeavours, there are three key teams in CCIB who work together to identify, capture, and manage opportunities and risk regarding Climate Finance; Sustainable Finance Solutions, Sustainable Finance Origination, which includes our Transition Finance team, and Environmental and Social Risk Management.

Sustainable Finance sits within CCIB and is responsible for pan-bank sustainable finance products and frameworks, as well as environmental and social due diligence on clients and transactions. Working closely with our subject matter experts in Sustainable Finance, CPBB seeks to develop products to serve our individual and business banking clients that help them make greener choices when it comes to their borrowing, investing and savings needs.

2.1. Sustainable Finance Solutions Team

Our Sustainable Finance Solutions Team maintains our frameworks to help identify green and sustainable finance and transition finance opportunities. In 2021, we launched our Transition Finance Framework – outlining the process and governance we will follow and the activities we will consider eligible for labelling as 'transition finance'. It is one of the world's first and will be a document that continues to evolve, as the technological landscape and climate scenarios evolve.

All our frameworks consider external standards and have been co-authored and/or reviewed by independent third-party experts:

- The Green and Sustainable Product Framework sets out the underlying eligible qualifying activities and themes for classifying clients and transactions as 'green' or 'sustainable', co-authored by Sustainalytics.
- The Sustainability Bond Framework is the basis for the issuance of green, social and sustainable bonds by the Group. We are a regular issuer in the bond market across a range of currencies and tenors. The Framework is used to guide and provide transparency on the use of proceeds of these bonds and their impact. This Framework has received a Second Party Opinion from Sustainalytics.
- The Transition Finance Framework sets out an initial list of qualifying activities for labelling as 'transition'. It presents our definition of transition finance as 'any financial service provided to clients to support them to align their business and/or operations with a 1.5 degree trajectory', and provides a set of well-defined principles that will help guide our clients onto a low-carbon pathway. The Boston Consulting Group (BCG) provided advice on the design of our first Transition Finance Framework.

The Sustainable Finance Solutions team manages the annual update of all three frameworks, including second party verification by a reputable Environmental, Social and Governance (ESG) rating agency where possible. The verification process reflects changes in the fast-evolving sustainable finance industry and ensures that the Group remains in line with market best practice. The Transition Finance Framework will similarly be updated on at least an annual basis to bring it in line with the latest available science, and to reflect changes in the pace of technological developments across different sectors and geographies. Where industry principles, guidelines and taxonomies are developed, similar to those for green, social and sustainable finance, we will update the Transition Finance Framework as soon as possible to reflect these.

2.2. Sustainable Finance Origination Team

To support our clients on their sustainability journey, we have a dedicated sustainable finance origination team which brings together a wealth of experience from traditional finance fields spanning Debt Capital Markets, Investment Banking and Advisory, to mobilise commercial capital and facilitate climate action where it matters most. Spread over five markets (Dubai, Hong Kong, London, Shanghai and Singapore), the team leads, executes and provides expertise on sustainable finance transactions across their respective regions (Asia Pacific and Australia, Greater China and North East Asia, Africa and Middle East, Europe and Americas).

In 2021 the Sustainable Finance team expanded to include a new ESG Advisory service to support our clients in their ESG strategy implementation, ESG reporting and disclosures, and ESG ratings. The ESG Advisory team seeks to blend our Sustainable Finance, Climate Risk and ESRM capabilities. A primary goal of the ESG Advisory team is to help our clients move forward on their ESG journey and maximise their access to capital. In addition, the ESG Advisory team works closely with our Transition Finance team and Carbon Markets trading team to create bespoke product solutions.

To support our net-zero approach, we have set up a Transition Acceleration Team consisting of investment and project finance bankers, and are tasked with actively supporting projects that reduce our clients' emissions intensity, which in turn, reduces our financed emissions. The team will seek to facilitate the creation of consortiums to aid the funding of transition projects across our core markets.

2.3. Environmental and Social Risk Management (ESRM)

The ESRM team is responsible for setting and operationalising the Group's sector specific Position Statements, covering all our carbon intensive sectors. The team works with our clients to avoid, mitigate and manage any potential impacts on communities or the environment associated with the financial services we provide following the principle of 'do no significant harm'. All corporate clients are assessed against the requirements set out in our Position Statements, including our Climate Change and Human Rights Position Statements. Clients operating in sensitive sectors will be further assessed against sector-specific criteria such as Mining and Metals, Oil and Gas, Fossil Fuel Power.

ESRM develops the Group's E&S Risk Management Framework for Clients.

3. Climate Risk

Sitting within Enterprise Risk Management (ERM), the Climate Risk team maintains second line of defence responsibilities for Climate Risk, which includes tools and methodologies for risk identification, measurement and management, integration into risk frameworks and processes, reporting and training across first and second lines of defence. This team delivers the day-to-day set-up, advancement and roll-out of Climate Risk-related governance, risk management, scenario analysis and disclosure for the Group.

Climate Risk recommends changes to operations and processes across the Group, working closely with other risk specialists, business areas and functions, helping them build knowledge and skills. In 2021 climate stress testing was centrally coordinated by the Enterprise Stress Testing team within Finance, supported by the Climate Risk team, with inputs from first line (e.g. sector specialists, Relationship Managers, Sustainable Finance, Credit and Portfolio Management) and second line experts (e.g. Senior Credit approvers, relevant Risk Framework owners such as country risk).

The central Climate Risk team provides support to regional teams as they incorporate requirements on Climate Risk set at Group level, and also provides specialist input to regional teams leading responses to local regulatory requirements. As Climate Risk is integrated into impacted Principal Risk Type (PRT) Frameworks, responsibility for second line ownership of Climate Risk specific to each PRT is delegated to the relevant Risk Framework Owner in Compliance, Credit Risk, Capital & Liquidity, Operational Risk, Country Risk and Reputational Risk.

Climate risks and opportunities are a growing priority across the Group. In addition to the teams listed as shown in Figure 4, there is a significant number of staff across our business areas and functions who spend a proportion of their time working on climate-related activities.

Figure 4: Full time equivalent (FTE) staff dedicated to supporting Climate Risk and opportunities

Line of defence	Department	FTE 2021	FTE 2020	FTE 2019
First line	Sustainable Finance	26	12	6
	Environment and Social Risk Management	10	11	8
Second line	Climate Risk	8	5	4
N/A	Group Sustainability	5	4	2
Total		48	32	20

Education and training

To fulfil the Climate Risk and net zero responsibilities placed on different teams, and on all individuals from across our network, our colleagues need to have an understanding of climate risks and opportunities – generally and specifically to their role. As such, in 2021 training and education has been a key focus and will continue to be in 2022 with a requirement for a broad and differentiated training proposition.

Supporting climate research

As part of our four-year partnership with Imperial College London, in 2021 we sponsored a series of public research projects.

Climate change and risks to the agricultural sector

This report examined the risks of climate change to the agriculture sector by examining the failings of major climate models to analyse extreme weather events and to address the immediacy of the significant impacts. Unavoidable, imminent effects of high-impact extreme weather events due to climate change will trigger shocks to the global food system and may lead to significant financial losses. The report shows the failings of major climate scenarios to include these effects and how financial institutions must seek greater resilience of agricultural systems.

Read the report

Nature-based solutions and the quest for low-carbon and climate-resilient agriculture

Nature-based solutions are actions that protect, restore and enhance natural and modified ecosystems. They also present an impressive range of environmental and social benefits like creating green jobs, protecting communities from flooding and improving air quality. The report looked into what are some of the barriers faced by nature-based solutions and how the voluntary carbon market can help.

Read more here

Climate-related financial and non-financial risk training

Training has been delivered across the Group on Climate Risk, including:

- Training to the Board on climate scenarios. Delivered by Imperial College London, the training aimed to support the Board in their role of reviewing and providing oversight of the Group's scenario-based climate stress testing.
- All staff training. Imperial College London have developed foundational level digital training for the Group. It is available for all to take and between October 2020 and January 2022, 2,602 staff completed the training.
- Job role specific training. To prepare staff, such as Relationship Managers, Client Coverage teams and Credit Officers for climate related client outreach and the integration of Climate Risk assessments into the credit underwriting process, tailored and job role specific training was delivered to more than 2,000 impacted staff in 2021.

We continue to sponsor the Imperial College London Climate Investment Challenge, a student-led competition, supporting the next generation to develop creative financial solutions and innovations. In 2021, the challenge expanded with an international reach and we sit on the judging panel.

Sustainable Finance and ESRM

In 2021 we have focused on educating colleagues across all levels of the Group on our new net-zero pathway and sustainable finance initiatives including:

- Dedicated training and awareness sessions involving people leaders Board members as well as business and function Management Teams, alongside a variety of internal communications and townhalls targeting a larger global audience.
- Dedicated Sustainable Finance Champions network with more than 800 colleagues. In 2021, the Champions network were invited to sessions hosted by both internal and external experts. Topics included COP26 hosted by an international law firm, sessions on different mechanisms and products required to finance the net zero transition, and trends emerging within the ESG leveraged loan industry.
- Training on the latest developments in the green commercial real estate sector (updates on new green building certifications including the International Finance Corporation EDGE accreditation) and new sustainable finance products (e.g. sustainable trade proposition, ESG derivatives and repurchase agreements) across the Group. Additionally, we have provided targeted training and developed e-learning modules on Article 501(a) of the Capital Requirements Regulation, which provides capital relief for provision of financing to entities that operate or finance infrastructure which provides or supports essential public services and contributes to environmental objectives.

In 2022 our sustainable finance education programmes will accelerate. This will include the roll-out of job-role specific training on both Climate Risk and opportunity, and a CCIB-wide sustainable finance learning curriculum. We will look to align our internal sustainable finance training modules with external accreditation standards, to help us effectively upskill our Relationship Managers on Climate Risk, as well as enhancing engagement with our clients.

Bank-wide climate education programmes

To drive sustainability and climate understanding across our global footprint, over 7,000 colleagues took part in Global Learning Week: Sustainable Us. There were 12 virtual events held over four days, and 700 colleagues also completed an internal certification. Sessions included the Group's approach to carbon offsetting, the science behind climate change, how we support our clients on a just transition and our net zero in financing approach.

In line with World Environment Day 2021, we launched our Global Sustainability Network, with more than 1,000 colleagues from across our markets sharing their knowledge and experiences on the wider sustainability agenda, including climate change. In addition to global town halls with industry and internal experts, the network receives a bi-weekly round-up of internal and external climate news through an external partnership with Curation. Within the UK, we launched Giki Zero, an external digital platform to provide colleagues with a personalised guide to help them lead a more sustainable lifestyle.

In 2022, we plan to build upon these engagement programmes to support our colleagues in reducing their footprint, both at home and at work along with a global learning programme with a target of engaging with 50 per cent of our network.

Incentives structure

Variable remuneration is applicable to employees through the Group Scorecard and Long-Term Incentive Plan (LTIP). This is overseen by the Board-level Remuneration Committee. Selected sustainability targets, including those with a climate change dimension, are incorporated into our annual Group Scorecard which informs variable remuneration for all colleagues under our Target Total Variable Compensation plan, including executive directors and Group MT. The performance measures for the 2021-23 LTIP relating to our operations include:

- Reduction in property emissions of 10 per cent annually.
- Reduction of flight emissions of 25 per cent.
- Offset 95 per cent of all residual emissions from our operations.

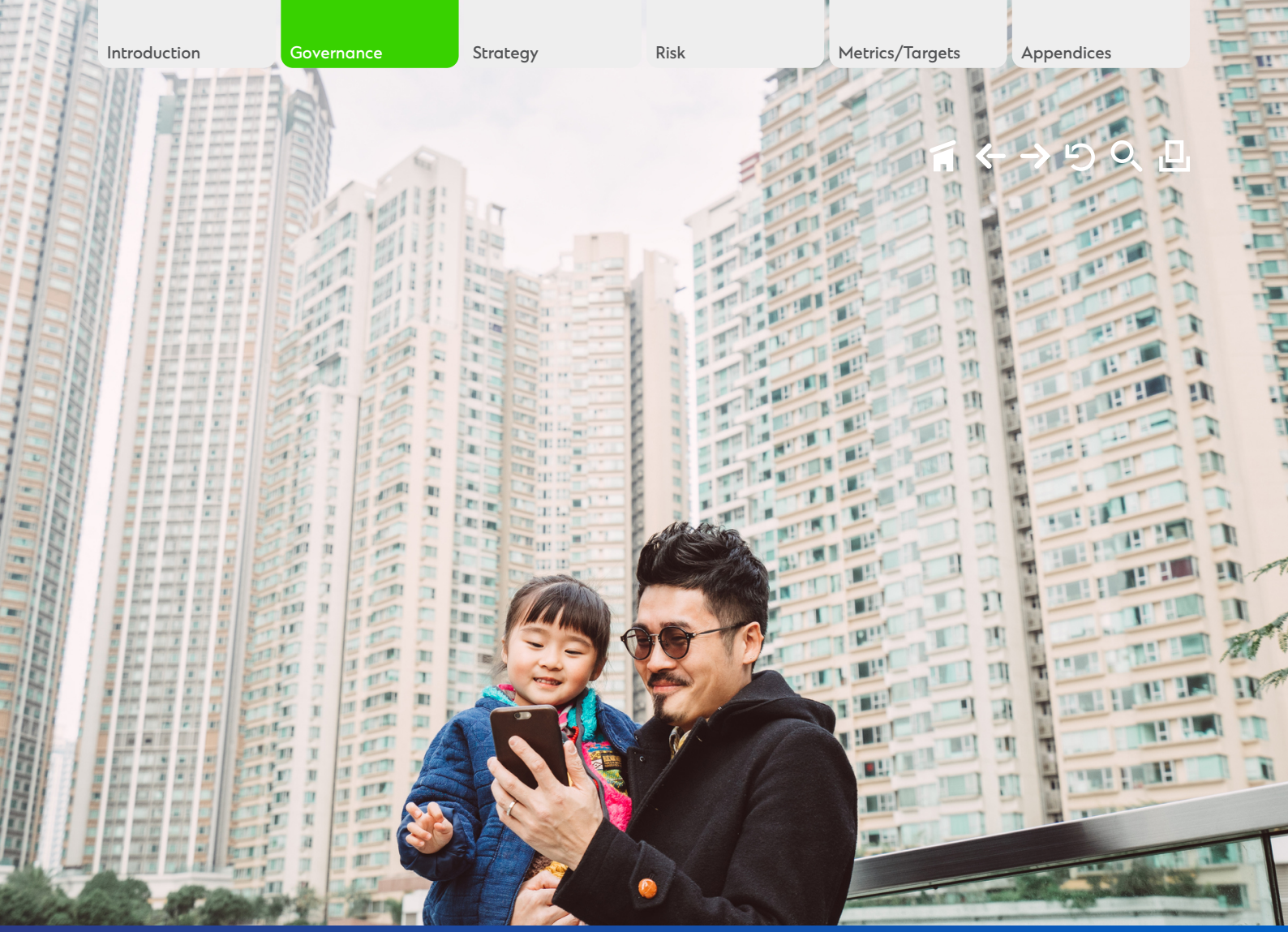
The delivery of aspects of our business approach are also incorporated into our LTIP. Our measures relating to climate are:

- Develop and implement a framework to align our financial services with net zero emissions by 2050, and deliver 2023 targets consistent with that plan.
- Provide $35 billion (cumulative) worth of project financing services, M&A advisory, debt structuring, transaction banking and lending services for renewable energy that align to our verified Green and Sustainable Product Framework.
- Only provide financial services to clients who are less than 80 per cent dependent on earnings from thermal coal (based on per cent EBITDA at group level).

In addition to the Group Scorecard, dedicated climate and sustainability related objectives apply across functional and regional scorecards including the Risk function, and individual objectives add a further link between sustainability and reward. Specifically, in relation to the delivery of core aspects of our climate change approach, the individuals and teams as shown in Figure 5 have objectives which impact variable remuneration.

Figure 5: Individuals or teams with objectives which impact variable remuneration

Individual or Team	Objectives/performance linkage
Chief Risk Officer (CRO)	The Group CRO is responsible and accountable for Climate Risk under the Financial Conduct Authority's Senior Managers and Certification Regime. This includes responsibility for overseeing the delivery of the Climate Risk work plan covering Climate Risk governance, Climate Risk assessment, Climate Risk scenario analysis and stress testing, and Climate Risk disclosure. These responsibilities form part of the Group CRO's objectives, and therefore directly affect their remuneration.
Risk	The Risk Scorecard, applicable to all employees in the risk function includes a 10 per cent weighted metric for integration management.
Climate Risk team	Delivery of the Group's approach to Climate Risk management, development of tools and methodologies for risk identification, quantification, management, monitoring and reporting; building capacity and skills for Climate Risk management across three lines of defence and organisation wide.
Sustainable Finance team	Income targets for sustainable finance strategic revenue related to sustainable finance products and delivery of relevant Sustainability Aspirations targets.
Clean Technology team, and other climate finance origination teams	Revenue targets for origination of climate finance.
Property team	Delivery of emissions reduction targets, operational net zero strategy by 2025 and Scopes 1 and 2 carbon offsetting.
Supply Chain Management	Delivery of business travel emission reduction targets and Scope 3 business travel carbon offsetting.
Net Zero Steering Group	Delivery of the pathway to net zero by 2050 with 2030 interim targets.



Case study

Growing our sustainable products

In 2021, we launched 13 new sustainable finance products, including ESG derivatives, sustainable repurchase products and sustainable current and savings accounts for both our CCIB clients and retail customers. Sustainable accounts enable our clients and customers to use their short-term capital and savings to support sustainable development, whilst retaining their ability to access funds on a daily basis.

We have also launched green mortgages in three of our key markets, Hong Kong, Singapore and Taiwan, and established our Sustainable Trade Finance proposition. These new products support our ambition to become the world's most sustainable and responsible bank, by transforming the way that we do business.

Strategy

We have integrated our climate strategy fully into our Stand of Accelerating Zero, and continue to focus on three pillars: accelerating sustainable finance; reducing our direct and financed emissions; and managing the financial and non-financial risks from climate change.

In this section

Strategy

"Our vision is to be the world's most sustainable and responsible bank, including accelerating the transition to net zero in our own operations by 2025 and in our financing by 2050."

Our approach to climate

In 2021, we formally elevated sustainability to become a strategic pillar. With this, our climate strategy has become fully integrated into our Stand of Accelerating Zero, and continues to be structured around three pillars, as shown in Figure 6. These are reflected in our 2022 Sustainability Aspirations and highlight the ways in which we aim to mitigate climate change, and our exposure to the risks arising from climate change.

Figure 6: Our approach to climate change

A.	**Accelerating sustainable finance** by supporting the net-zero transition by 2050 and providing finance in the locations most vulnerable to, and least prepared for, climate change.
B.	**Reducing our direct and financed emissions** in alignment with our aim to reach net zero in our operations by 2025 and financing by 2050.
C.	**Managing the financial and non-financial risks from climate change** by developing the ability to systematically identify and assess Climate Risk and building this into our mainstream risk management practices and governance.

As part of our strategy, we continue to work collaboratively with our clients, industry experts and regulators to develop our approach to managing Climate Risk. Our snapshot below highlights our key engagement activities since 2018 and Appendix 1 includes a list of the platforms and initiatives we continue to support.

In our strategic business planning, we consider 'short term' to be less than two years, 'medium term' to be two to five years, and 'long term' to be beyond this.

A snapshot of our action on climate change

2017

Publicly supported TCFD recommendations.

Designated climate change as a principal uncertainty in our risk management framework.

2018

Published plans to end direct financing of new coal-fired power plants.

Released Prohibited Activities list.

Signed the Katowice commitment.

Formed new Sustainable Finance team.

2019

Formed a new central Climate Risk team.

Senior management responsibility for Climate Risk designated to the Group Chief Risk Officer and Board.

Group Risk Committees Terms of Reference extended to included Climate Risk.

Approved Climate Risk Appetite Statement by the Board.

Created a comprehensive workplan to develop and implement a Climate Risk Framework.

Published financed emissions white paper.

Announced approach to coal-dependent clients, and new $35 billion renewable financing target 2019-2023.

Launched our Green and Sustainable Product Framework co-authored with an independent second party.

Launched the world's first sustainable deposit product.

Issued the Group's first Sustainability Bond.

Four-year partnership with Imperial College London for academic advisory, research and training on Climate Risk.

2020

Strengthened our central Enterprise Risk Management Framework to include Climate Risk as a material cross-cutting risk.

Inclusion of qualitative Climate Risk into stress testing through the annual Internal Capital Adequacy Assessment Process (ICAAP).

Invested in and acquired tools for measuring Transition Risk and Physical Risk – initial outputs published in TCFD.

Integrated Climate Risk into Reputational and Country Risk frameworks.

Imperial College London Climate Risk digital training made available for all staff.

2021

Announced our 2050 pathway to net zero in our financing including 2030 interim targets for key sectors.

Appointed Chair of the Net-Zero Banking Alliance.

Launched new sustainable finance products across CCIB and CPBB – including sustainable deposits, green mortgages, ESG derivatives and ESG repurchase agreements.

Created a new ESG Advisory service to support our clients in their ESG implementation, reporting, rating and strategy.

Launched our Transition Finance Framework setting out how our transition finance can guide our clients onto a low-carbon pathway.

A. Accelerating sustainable finance

In 2021, we announced our pathway to reduce financed emissions, mobilise capital, and accelerate climate solutions to reach net zero by 2050, including an ambitious set of targets to reduce our financed carbon emissions by 2030. This approach is based on the data currently available and aligns to the International Energy Agency's Net Zero Emissions by 2050 scenario (NZE). To ensure we remain on track, we have set short- to medium-term quantifiable targets to manage our progress, and disclose our data on an annual basis. Details of our net zero targets in this area are outlined in metrics and targets section of this report.

Across our CPBB function, in 2021 we rolled out foundational capabilities across key markets, including the launch of sustainable term deposits in Singapore and Taiwan, sustainable current and savings accounts in Hong Kong, and carbon neutral SMART credit cards in Hong Kong, Singapore and Bangladesh. We also leveraged partnerships to bring innovative capabilities to our clients, including our partnership with Swedish fintech Doconomy. It helps clients track, measure and manage their impact on carbon emissions and fresh water consumption based on the goods and services they purchase, identified through credit and debit card spending.

As part of our aim to reach net zero emissions in our financing by 2050, we have grown our Energy Transition desk to initially encompass carbon trading on the UK Emissions Trading Scheme (UK ETS) and European Union Emissions Trading System (EU ETS) and financial natural gas trading, therefore providing key support to help our clients transition to a lower carbon business.

Our net-zero approach

Accelerate sustainable finance

- Mobilise $300 billion in green and transition finance between 2021 and 2030.
- Launch and grow sustainable products.
- Deploy a new Transition Acceleration team.
- Report on mortgage emissions.
- Double sustainable investing assets under management and integrate ESG considerations into our wealth management advisory.

2030 interim targets to reduce financed emissions

- Reduce absolute financed thermal coal mining emissions by 85 per cent.
- Reduce emissions intensity in other high carbon sectors with the interim 2030 targets:
  - Power (-63 per cent emissions intensity)
  - Steel and Mining (-33 per cent emissions intensity respectively)
  - Oil and Gas (-30 per cent emissions intensity).

B. Reducing our direct and financed emissions

We focus on three areas within our strategy to reduce direct and financed emissions: our own operations, those of our suppliers and the emissions associated with our clients.

Our operations

We are committed to reducing the climate change impacts of our own operations setting medium- and long-term targets and developing our operational Sustainability Aspirations. We have accelerated our approach with the aim to reach net zero in our operations by 2025, five years ahead of our original plans. Our targets are intended to demonstrate the actions necessary to mitigate the most severe physical impacts of climate change. We are also committed to compensating the remaining residual emissions by purchasing a mixture of high-quality avoidance and sequestration carbon credits.

We aim to achieve this by minimising the use of natural resources in our operations, and where we have set targets to improve energy efficiency, we will verify our performance through third party assurance. We are reviewing our direct fuels, on site renewable energy sources and constantly improving our facilities to deliver the efficiency improvements needed across our properties to meet these challenging targets.

Our suppliers

With approximately 12,000 suppliers, we understand that there can be significant carbon emissions associated with the procurement of goods and services. In addition, severe weather events could result in a material potential physical impact on our supply chain that may impact our ability to serve our clients.

To manage this, in 2021, we engaged a consultancy firm with expertise in the subject matter to help us estimate our vendor-related emissions using recognised emission factors and primary data (when available), and our spend category plans have been updated accordingly, including specific areas to drive emission reductions.

Through our Supplier Charter, we expect our suppliers to support and promote standards in environmental protection and to manage and mitigate environmental risks.

+ Read our Supplier Charter

Case study

Sierra Leone solar photovoltaic array

In 2021 the Property team in Sierra Leone installed more than 300 solar photovoltaic panels on the roof of our headquarters building in Freetown. The installation is the largest of its kind in the country and currently produces more direct power than the building consumes. Excess power is exported to the local grid, contributing to decarbonisation of the city's power supply.

Our clients

Our seven Position Statements outline the minimum cross-sector and sector specific criteria against which we assess our clients, with the aim of reducing environmental impact in line with our net-zero approach. Our approach to Environmental and Social (E&S) Risk remains embedded directly into our credit approval process and is a key tool in determining our appetite for clients operating in high-carbon sectors.

In addition to our Position Statements, we use the International Finance Corporation (IFC) Performance Standards, the Equator Principles (EP) and Good International Industry Practice to determine our approach to E&S management.

In 2021, we updated our Position Statements, covering all sensitive sectors and introduced enhanced requirements which will become effective from 2022, with the exception of additional restrictions placed on thermal coal dependent clients, which were effective immediately. We also now expect all clients in the power generation, mining and metals, and oil and gas sectors to have a strategy to transition their business in line with the goals of the Paris Agreement by the end of 2022.

We will review a client's approach to transition using the output from our client Climate Risk assessments, in particular a client's Transition Risk mitigation score, which will consider both quantitative inputs (e.g. emissions measurement data, emissions reduction targets and capital investment plans), and qualitative overlays through direct client conversations to confirm management focus and commitment.

To support our coal phase out, clients have been categorised at group and entity level based on their level of coal dependency. Those that have triggered the 100 per cent threshold at group and entity level have either been exited or are in the process of being exited, subject to contractual arrangements. Our E&S Risk Assessments have been updated to reflect this criteria and clients will be tested on an annual basis going forward. We will actively engage with clients that are forecast to breach our requirements in the future to try and support them with their transition.

We are clear that we must support and guide our clients to a low carbon pathway and will provide them with green and transition financing as the main levers to help us achieve our net zero targets. We will also be assessing our exposure to emissions intensive clients and/or assets, and will seek to replace these over time by adding new low carbon intensity clients and/or assets to our portfolio. This does not mean walking away from our existing clients, but instead working with them to finance investment in low carbon methods and technologies, particularly across Asia, Africa and the Middle East (AAME) where there is the most significant investment gap and where investment would have the biggest impact. Where our clients do not show a sufficient level of commitment to the transition, we reserve the right to cease providing them with our services.

Our approach to green and sustainable finance is informed by currently available information, including the Climate Bonds Initiative White Paper and Discussion Paper, the EU Sustainable Finance Taxonomy and Consultation Report on Taxonomy Extension Options, and our own sectoral Transition Playbooks.

Specifically, 'transition' assets and activities must:

- Be compatible with a 1.5 degree trajectory, established by science.
- Not hamper the development and deployment of low-carbon alternatives or lead to a lock-in of carbon-intensive assets; (considering the economic life of these assets).
- Meet the minimum safeguards as defined in our Environmental and Social Risk Management Framework.

Our Green and Sustainable Product Framework sets out underlying eligible qualifying themes and activities that the Group deems as green/sustainable, mapped to the relevant Sustainable Development Goals (SDGs). This Framework guides the development of themed green and sustainable products that reference a specific green and sustainable use of proceeds. We have also noted areas where there is broad alignment between the Framework and the EU Taxonomy. In particular, we have indicated the 'sub-themes' that align to the 'technical screening criteria for economic activities that can make a substantial contribution to climate change mitigation or adaptation'.

Read more about our Position Statements at **sc.com/positionstatements**

Read more about our prohibited activities at **sc.com/prohibitedactivities**

Read more about our reporting against the Equator Principles at **sc.com/equatorprinciples**

C. Managing Climate Risk

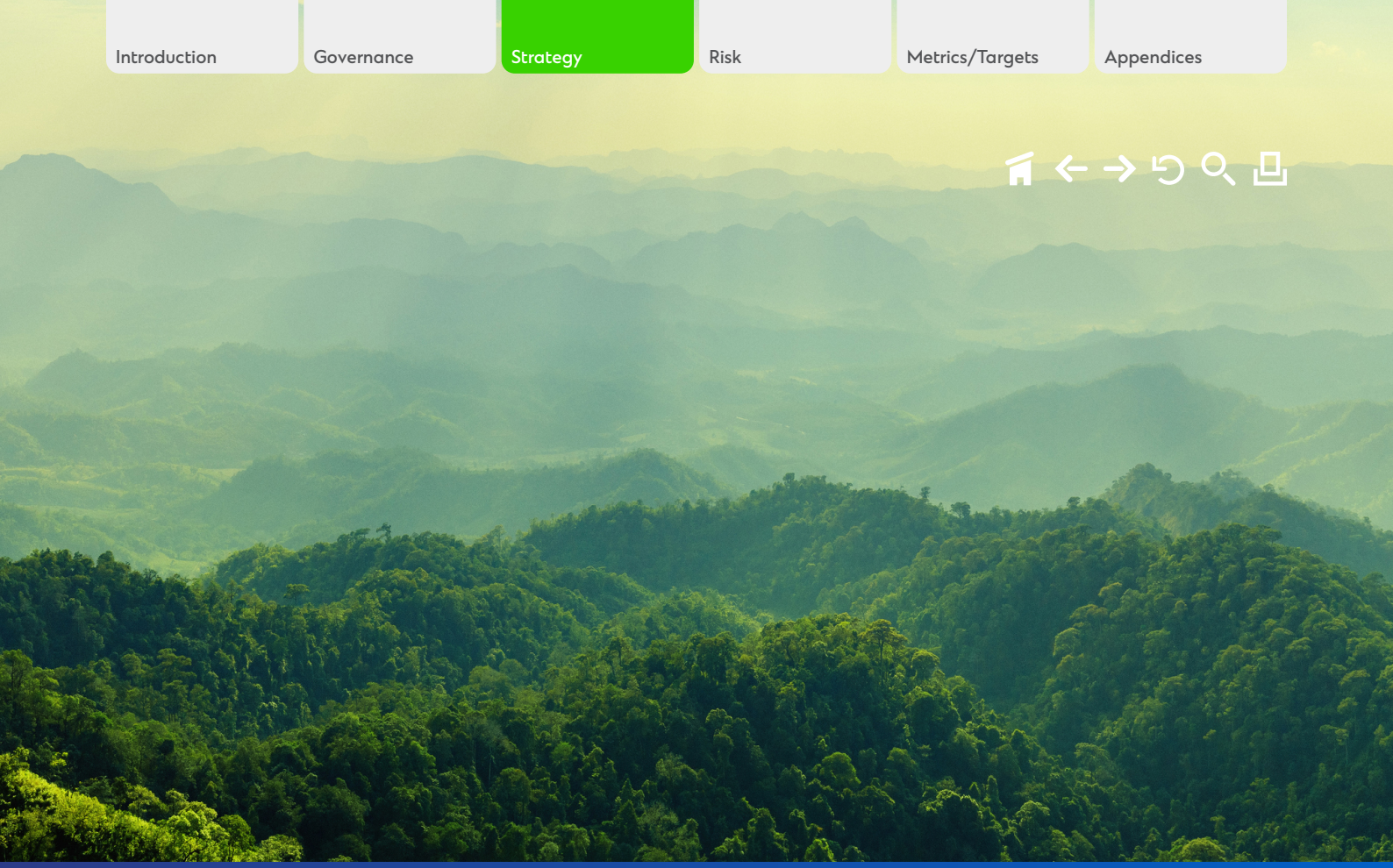
Whilst transitioning to a net zero economy creates plenty of opportunity, it comes with risk. But before we can manage the risk, first we must calculate its size.

We acknowledge that the uncertainties surrounding how and when physical and Transition Risk will impact mean that no tool or methodology is perfectly able to estimate risks from climate change now or in the future. However, given the urgency of climate change – we are moving quickly – developing methodologies, engaging with clients and integrating Climate Risk into our mainstream risk management activities.

Climate Risk has been initially embedded as fully as possible in the Group's governance, risk management and scenario analysis processes. It was incorporated into our central Enterprise Risk Management Framework (ERMF) in 2019 and it is designated as an Integrated Risk Type – as the risks from climate change manifest through existing risk types. For example, the creditworthiness of our clients or the operational viability of our office buildings. Details on the risks identified and processes used to do this can be found in the Risk section on page 35.

We have a toolkit to quantitatively measure climate-related physical and Transition Risk and in 2021 significantly strengthened our stress testing and scenario analysis abilities. Some results are disclosed in this report to illustrate our early steps in beginning to quantify the impact of Climate Risk. We fully intend to develop and mature our application of Climate Risk assessment over the coming years.

Parts of our Climate Risk assessments use an outer time horizon of up to 2050 for Transition Risk and up to 2100 for Physical Risk. For more details on how we apply scenario analyses and consider time horizons, please see pages 29-34.



Case study

Our approach to carbon credits

We believe that carbon offsetting is an invaluable tool to help the global economy decarbonise. It helps to provide direct financing to climate-action projects that would not otherwise receive it. While we continue to focus on reducing emissions as a priority, our approach is to buy good quality carbon credits to offset our residual operational emissions. We realise that time is running out and technology is not always available to reach net zero at the pace required.

In 2021, we committed to acting responsibly and made the decision to offset annually all our residual Scope 1-3 (flights and data centres) operational emissions. Through a dedicated Carbon Offset Working Group, made up of subject matter experts from across the Bank reporting into the Sustainability Forum for Management Team oversight, we have purchased high quality, verifiable and measurable carbon credits.

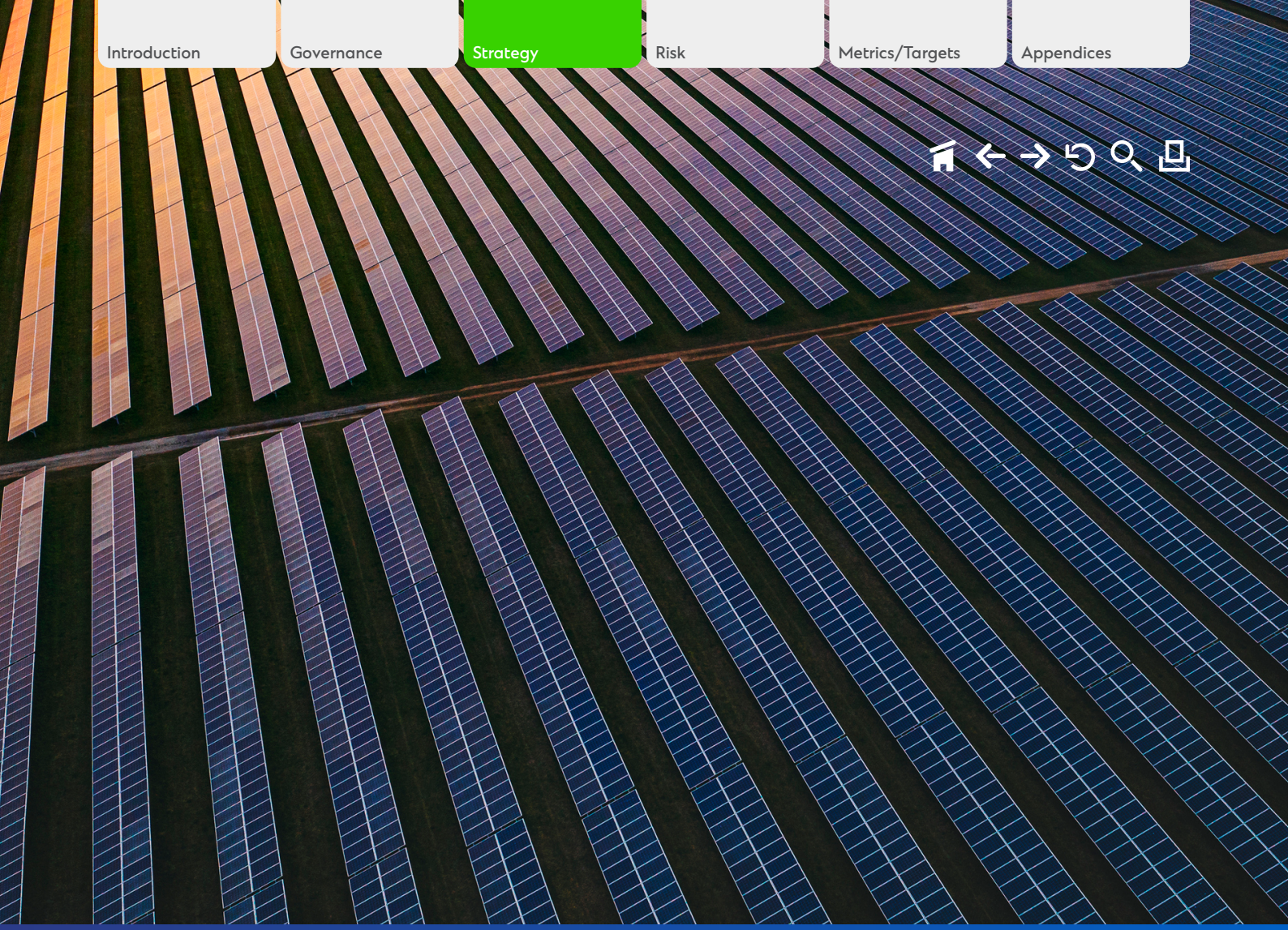
We understand that the current carbon credit standards do not guarantee that quality is as high as possible. Consequently we support the goals of the Taskforce on Scaling Voluntary Carbon Markets (TSVCM) to develop a set of Core Carbon Principles (CCPs) that will allow the development of consistently high-quality carbon credits. Until then we will continue to take a rigorous approach to ensure that all credits we buy meet high-quality standards.

In line with these goals in 2021, the working group agreed and executed:

- Procurement from verifiable and high-quality offset programmes (with no double-counting or poorly calculated emission potential) located in our emerging market footprint.
- A mix of 'avoidance/reduction' (80 per cent) and 'sequestration/removal' (20 per cent) credits of our total 2021 operational Scope 1-3 emissions.
- At a blended cost of $7.65/tonne.

A full breakdown of the cost, volume and procurement including our certifications can be found on page 55.

In 2022, the working group has committed to follow the same strategy to purchase high quality and verifiable offsets at a cost of $15/tonne and will align to the TSVCM CCPs while it continues to be developed.



Case study

Our geographical approach to client engagement

We know that the speed of decarbonisation is influenced by the availability of technologies and capital as well as the need for a just transition. This is particularly critical in the emerging markets where we operate and where high-emitting sectors may be disproportionately required for livelihoods and economic growth.

To support our clients' transition to a low carbon economy in developing markets, we are developing a new Engagement Framework to assess our clients in the context of the geographies in which they operate. Our developing methodology builds upon global standards and industry leading expertise and will be made transparent for the wider banking sector as the banking industry's net-zero ambitions progress.

The Engagement Framework follows Paris-aligned decarbonisation trajectories, under which different industries and regions are expected to decarbonise at different rates.

By evaluating companies based on their net-zero ambition and transition pathway, our framework normalises against the pathway for the geography in which a client operates. Following this, we place each client on a matrix and consider its ability to influence its net-zero ambition and/or pathway.

To ensure a just transition, we also take other factors into account, such as the impact of financing decisions on local sustainable development before we decide on the next steps for engagement with clients on a case-by-case basis.

Scenario analysis

In order to assess climate-related risks and opportunities in the short, medium, and long term we use scenario analysis to consider how risks and opportunities may evolve under different situations. We have progressively strengthened our scenario analysis capabilities over the last three years and developed our stress testing and scenario analysis infrastructure and capabilities to incorporate Climate Risk into data, modelling and analysis. We aim for these to be continuously improved in the near future to cater to shorter, more plausible scenarios that can inform our business strategy and financial planning.

In 2021, we analysed the impact of climate risks to our banking book using Phase 2 scenarios from the Network of Central Banks and Supervisors for Greening the Financial System (NGFS). Modelling the impact of Climate Risk over a 30-year period across multiple dimensions was challenging, including but not limited to scenario data and pathways, client-specific data and modelling review limitations. Estimating the impact required us to take several new approaches, such as working with our clients to understand their Climate Risk preparations, sourcing new external data sources and models, and working with external consultants and academics.

A basic introduction to Climate Risk scenarios and an overview of the various scenarios, published by governmental and academic bodies that have informed the development of our own tailored scenarios, is set out in Appendix two of our 2020 TCFD. The section that follows describes the scenarios we use, their inputs, assumptions, limitations, and key insights.

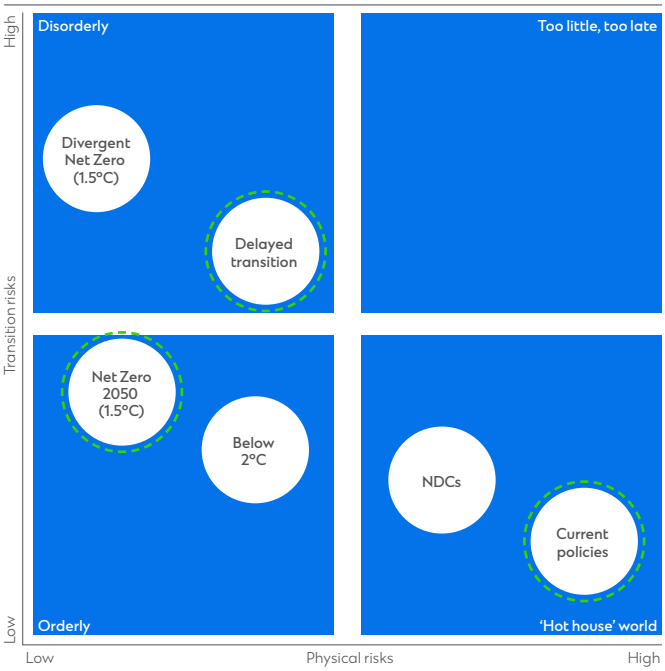
Scenarios used at Standard Chartered

Transition Risk scenarios

Applied to our corporate portfolio, we have used the NGFS Phase 2 scenarios. The NGFS framework maps scenarios in three different worlds with two scenarios produced under each category:

- **'Hot house' world** scenarios include only currently implemented or pledged policies, which at a global level are insufficient to halt significant global warming resulting in severe Physical Risk.
- **Orderly** scenarios assume climate policies are introduced early and become increasingly stringent, with both physical and transition risks relatively subdued.
- **Disorderly** scenarios explore higher Transition Risk due to policies being delayed or being divergent across countries and sectors.

Figure 7: NGFS Scenarios Framework and selected Standard Chartered scenarios



Positioning of scenarios is approximate, based on an assessment of physical and transition risks out to 2100.

Selected NGFS scenarios used in scenario analysis.

From the three NGFS scenarios, we select the ones highlighted in Figure 7 above and below. Each scenario is characterized by a different level of Transition Risk, driven by various features in each scenario.

Features of the NGFS scenarios used in Standard Chartered scenario analysis[2]

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

Colour coding indicates whether the characteristic makes the scenario more or less severe from a macro-financial risk perspective^
- Lower risk
- Moderate risk
- Higher risk

Selected NGFS scenarios used in SC scenario analysis

High-level scenario assumptions and time horizons to consider in scenarios used in Standard Chartered scenario analysis

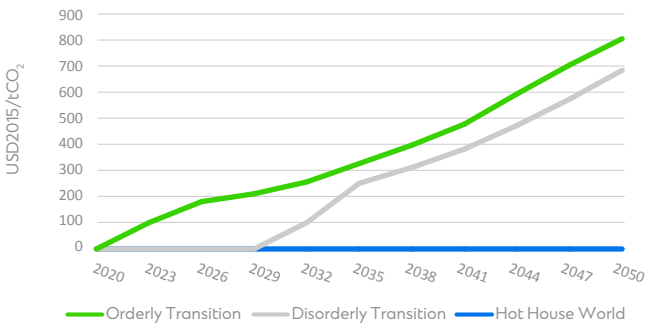
Transition scenarios	High-level assumptions	Time horizon
'Hot house' world: **Current policies**	This scenario assumes no additional policies beyond those that are currently implemented, along with slow technology change, resulting in high physical risks with the global temperature rise being over 3°C by 2100.	Up to 2050
Orderly Transition: **Net zero 2050**	Very stringent climate policies and rapid technology change are expected to limit global warming to 1.5°C. CO_2 net zero will be achieved by 2050, while some jurisdictions such as the US, EU and Japan reach net zero for all GHGs.	Up to 2050
Disorderly Transition: **Delayed transition**	This scenario assumes no additional action until 2030. Strong policies are then needed to limit warming to below 2°C. It is also characterised by significant regional variation in policy reaction, which is reflected by divergent carbon prices across regions.	Up to 2050

Key scenario parameters that inform Group scenarios

Global carbon price

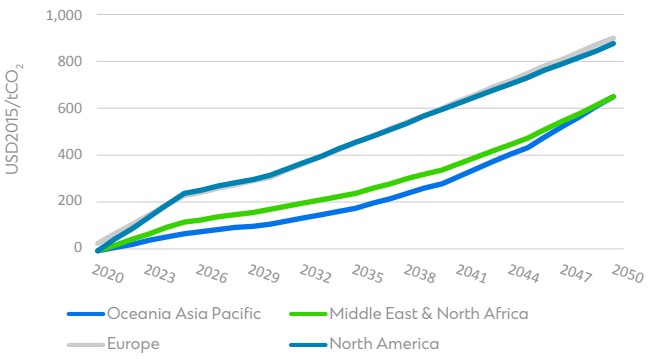
In the orderly transition scenario, the global carbon price rises progressively to ~$800 by 2050 as the transition progresses. By contrast, in the Disorderly transition scenario, the global carbon price is very low throughout the 2030s, and then rises steeply in line with the extreme decarbonisation effort required in the late 2030s onwards.

Figure 8: Global carbon price used in the NGFS orderly transition scenario and applied at Standard Chartered



Carbon prices can vary significantly across regions, as is shown in Figure 9. In the Middle East and North Africa, and Oceania Asia Pacific, the trend of carbon prices in an orderly scenario is gradual over the 30-year horizon, topping at around $650. North America and Europe on the other hand experience a more rapid pick up in carbon prices between 2020 and 2025 to approximately $240, after which they gradually increase to reach a price of just under $900 by 2050.

Figure 9: Regional carbon price used in the NGFS orderly transition scenario and applied at Standard Chartered



2 https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs_climate_scenarios_phase2_june2021.pdf

Oil and gas

- Oil demand varies depending on the scenario pathway taken as is shown in Figure 10. In the 'hot house' world scenario, the oil demand remains similar to the present day across the time horizon, whereas in both orderly and disorderly transition scenarios, oil demand begins to fall after 2030 and drops by about half by 2050.
- The oil price is expected to be impacted as in Figure 11. Under both orderly and disorderly transition, the oil price is expected to drop by about half by 2050 i.e. from around current day $60 to $26 in 2050. In the disorderly scenario, there is an initial increase before it peaks by 2030 and after which it follows the orderly transition scenario. In the 'hot house' world scenario, the oil price is expected to increase continuously to above $100 by 2050.

Figure 10: Global oil demand

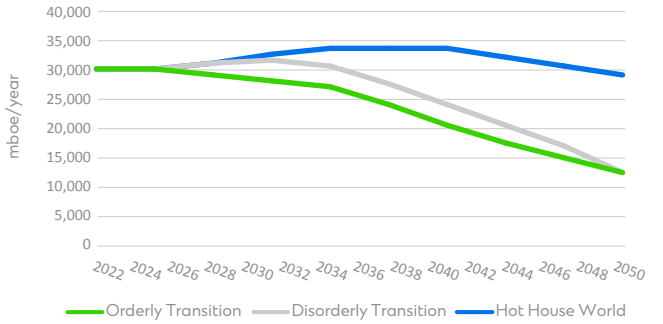


Figure 11: Global oil price

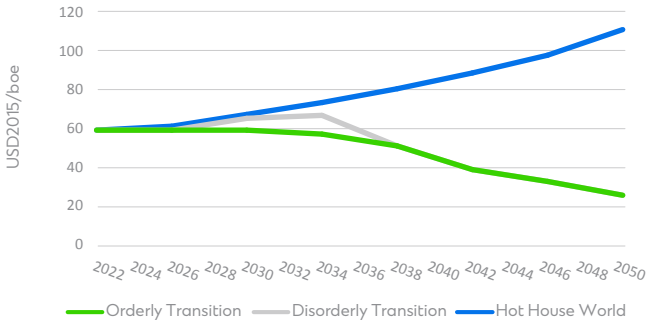


Figure 12: Global gas demand

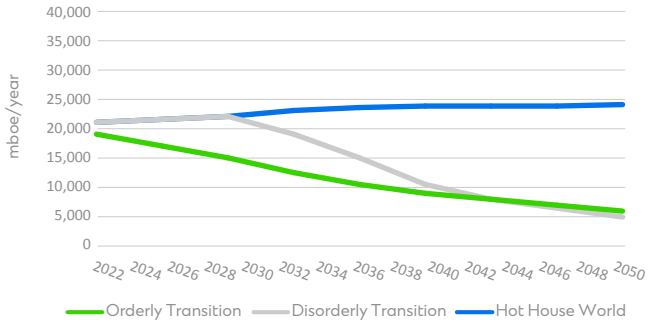
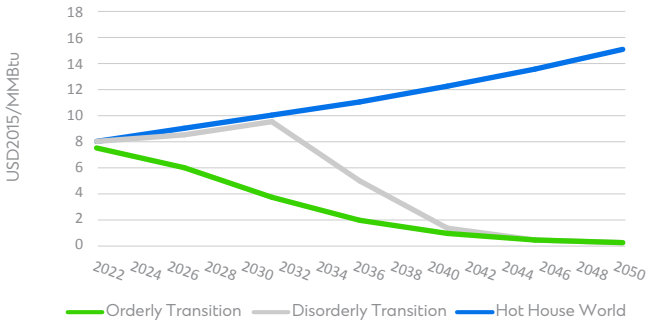


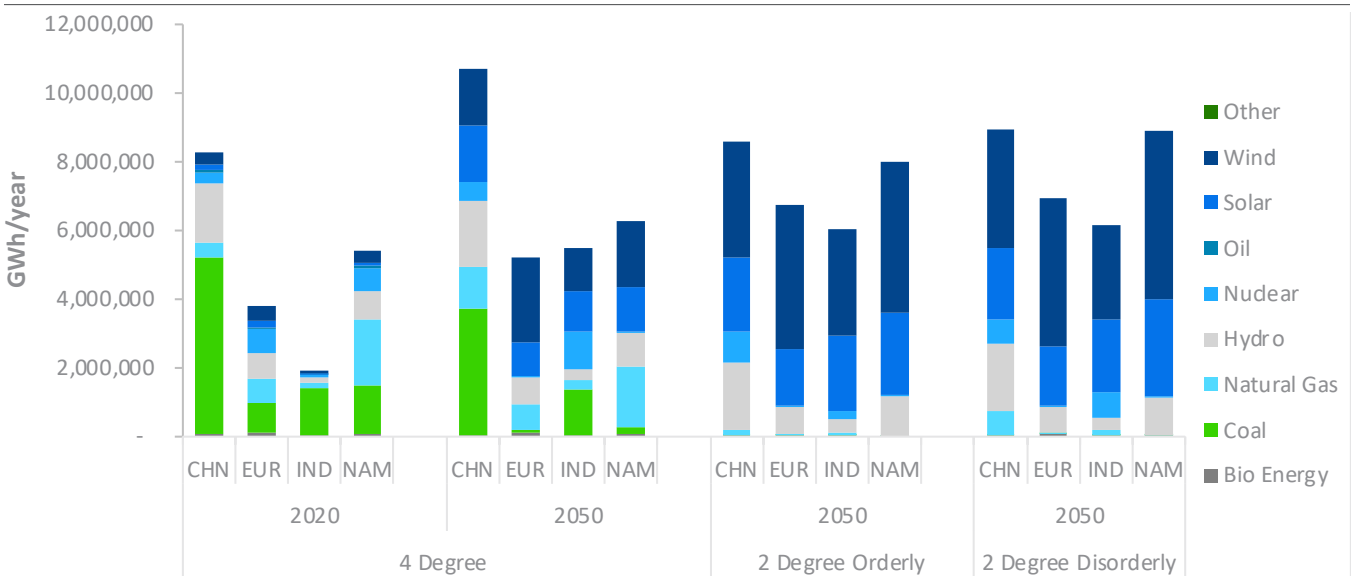
Figure 13: Global gas price



Regional power generation

- Power sector decarbonisation is not uniform across all regions in our scenarios, reflective of current market conditions and regional need for energy, considering population growth and economies expanding at different rates.
- Both the orderly and disorderly transition scenarios are characterised by a highly decarbonised power sector in 2050 with a significant expansion in renewables.
- In the 'hot house' world scenario, renewables are projected to increase to meet the growing demand, while the total hydrocarbon power production remains relatively stable.

Figure 14: Regional power production by energy mix used in the NGFS scenarios, applied by Standard Chartered



Limitations

- Our Climate Risk scenario analysis capabilities is still in its infancy, as is the case for most financial institutions. Over the past two years we have refined the tools as well as advanced our experience in developing integrated climate scenarios in our risk management practices.
- Despite this, the modelling of Climate Risk impact over a 30-year period has been expectedly challenging across multiple dimensions including scenario data and pathways, availability of client-specific data, and modelling limitations.
- To develop the need for growth in publicly available data, we undertook an extensive client outreach to approximately 2,000 of our corporate clients, to gather information on their levels of physical and Transition Risk, and levels of preparedness.
- A number of the assumptions and methodologies that underpin scenario analysis rely significantly on nascent methodologies as well as a dependence on first generation external models and data challenges. Most of these limitations are shared across the industry. Levels of disclosure, climate preparedness and policies to limit emissions are often observed to be less mature in some emerging market regions (shown by our client insights on page 45).

  As more solution providers come to the market and banks start extensively using them, and building internal understanding and capabilities, the transparency and sophistication of modelling methodologies and assumptions will likely increase.

Further work

As part of our ongoing refinement, we have identified several areas for potential improvements to our modelling for future analysis. These include:

- Improved data availability and ability to gather data across our corporate and retail clients (e.g. client level emission intensity, physical locations of assets, power consumption patterns).
- Continued improvement in scenario design and modelling capabilities, with a long-term objective to develop this capability in-house and design internal models.
- Despite these limitations, our intent is to focus on how Climate Risk management can inform portfolio management and support opportunity identification with clients on their transition and adaptation pathways.

Transition Risk scenario analysis results

Modelled results demonstrate the clear benefits of early action to mitigate climate change. The results for the orderly and disorderly transition scenarios are in a similar range, with sectors such as Oil & Gas, Metals & Mining and Commodity Traders most impacted due to the rise in carbon pricing and drop in fossil fuel demand. In a current policies scenario, losses build up slowly through the early years but peak by 2050, with the highest impact across scenarios and most sectors materially impacted.

In the orderly transition scenario, the GDP impact can be seen until around 2025 when it is superseded by the rising carbon price, which steadily increases from 2021 up to 2050. The levels are higher for the developed economies compared to the emerging markets. This leads to an overall increase in defaults, driven by a decrease in revenue and profitability levels due to an increase in carbon price related costs.

In the disorderly transition scenario, a GDP shock is introduced in 2030, the impact of which is amplified by fast growing carbon prices which continue to impact company Probability of Defaults (PDs) while GDP recovers. The Oil & Gas sector experiences the highest sector revenue decrease and an even higher profitability decrease.

- The modelled output in a 'hot house' world scenario is mainly impacted by the change in GDP, showing limited impact of Physical Risk. The Commercial Real Estate sector is materially impacted in a 'hot house' scenario as it sees decreases in revenues, which adds pressure to highly leveraged businesses and slight changes to profitability lead to high increases in leverage. The Oil & Gas sector is the biggest winner in this scenario, driven by the high oil prices and demand in the scenario which continually keeps rising.

For an example of the data outputs when the scenarios in this section are applied to a proportion of our corporate clients, please see the Metrics and Targets section.

Physical Risk scenarios at Standard Chartered

Our Physical Risk tool, provided by Munich Re's NATHAN, uses standardised scenarios and set time horizons to assess future risk from acute and chronic physical risks. The forward-looking risk indices are derived based on the Representative Concentration Pathways (RCP) scenarios published by the Intergovernmental Panel on Climate Change (IPCC). Given the academic challenges with forward-looking Physical Risk scenarios, it is not possible at this point to customise these as we have done for Transition Risk scenarios.

Figure 15: Forward-looking physical risks, scenarios and time horizons used in our Physical Risk assessments

NATHAN climate hazard indices		Description of current and projected climate hazard scores	RCP Scenario	Time horizons
Acute	Tropical Cyclone (TC)	Tropical Cyclone zones	4.5, 8.5*	2050, 2100
	River Flood	River Flood zones	4.5, 8.5	2050, 2100
Chronic	Sea-Level Rise	Sea-Level Rise zones	2.6, 4.5, 8.5	2100
	Heat Stress	Heat Stress Index based on range of high-temperature indicators	2.6, 4.5, 8.5	2050, 2100
	Precipitation Stress	Precipitation Stress Index based on heavy- precipitation indicators	2.6, 4.5, 8.5	2050, 2100
	Fire Weather Stress	Climatological index for wildfire hazard	2.6, 4.5, 8.5	2050, 2100
	Drought Stress	Drought Stress Index based on Standardized Precipitation-Evapotranspiration Index (SPEI)	2.6, 4.5, 8.5	2050, 2100

* TC for RCP8.5, 2050 based on RCP4.5, 2100 modelling; TC for RCP8.5, 2100 not available yet

Qualitative review of climate risks and opportunities in annual business strategy and financial planning

In 2021, Climate Risk was considered as part of our formal annual corporate strategy and financial planning process.

This assessment was largely qualitative and focused on revenue reliance from clients in high-carbon sectors and/or located in regions most exposed to Physical Risk, considering adequacy of mitigation plans. This was then independently reviewed by regional and client-segment CROs and the Climate Risk team. It was included in the Risk review of our corporate plan, which was considered by the Board as part of their approval of the overall Corporate Plan.

In most cases, the physical and transition risks identified were assessed to be well controlled in the short term. The Group is not actively targeting growth in most of the high-carbon sectors (many of which are identified as vulnerable sectors as a result of COVID-19, and are being actively managed from a credit risk perspective), and is instead prioritising sustainable finance products to clients in high-carbon sectors to decarbonise their business models. Growth ambition is shifting to lower-carbon sectors such as clean technology. The Group's sustainable finance priorities, including innovative products such as sustainable deposits, carbon trading and ESG Advisory, and dedicated transition frameworks, are a robust response to transition risks in the short term, strengthening our resilience towards a 2°C or lower transition scenario. However, longer-term transition risks were highlighted particularly for the Africa and Middle East (AME) region, given its dependency on fossil fuels; and longer-term physical risks were deemed to be most relevant for the Asia region.

Through 2022, we intend to develop management scenarios (using a combination of off the shelf and internally defined scenarios) with an aim to strengthening business strategy and financial planning to support the Group's net zero journey. Our intent will be to focus on how Climate Risk management can inform portfolio management and support opportunity identification with clients on their transition and adaptation pathways.

Risk

In 2021 we made substantial progress in furthering our Climate Risk quantification capabilities, with a strong focus on embedding Climate Risk considerations into mainstream risk-management processes.

In this section

Risk

In 2021 we improved our understanding of climate-related risks through our participation in regulatory stress tests. We engaged with our corporate clients to understand their transition and physical risks, as well as their plans to transition and prepare for climate change. The data we captured helped us develop our own client-level climate-risk assessments, which we are integrating into our credit-underwriting processes, as we respond to existing and emerging prudential regulations.

We recognise that Climate Risk is a new risk type and that we, like our peers, are in the early stages of a longer journey to fully embed Climate Risk management. We will adapt and refine our approach as the impact from Climate Risk becomes clearer, and the tools and methodologies to gather reliable data and quantify Climate Risk mature.

Our approach to managing Climate Risk

We are exposed to Climate Risks through our clients, our own operations and from the sectors and markets we support. Preparations to manage Climate Risk as a prudential financial risk began in 2019. At that time, our Group Chief Risk Officer took responsibility for Climate Risk. Since then, we have designed an approach that begins to integrate Climate Risk within other principal risk types within our central Enterprise Risk Management Framework (ERMF), based around two principles:

- **Treat Climate Risk like a traditional risk type.** Climate Risk may lead to financial losses and non-financial detriments, much like Credit Risk, and should be managed as such, to limit the Group's exposure to detriments. This means embedding climate-risk considerations into our existing risk identification and management processes, governance, reporting, scenario analysis (including stress testing) and strategy and financial planning.
- **Recognise and build for where Climate Risk is different.** Unlike traditional risk types, Climate Risk is likely to crystallise over much longer time horizons and is inherently difficult to quantify. Its unique features and a need for granular forward-looking measurements requires the use and development of new tools and methodologies to quantify and analyse Climate Risk implications to business. We have worked with the industry and peer banks through external forums and roundtables, and engaged with third party providers, academia and subject matter experts to develop our bespoke Climate Risk toolkit.

Process for identifying and assessing Climate Risks

We use a range of tools and methodologies to quantify Transition and Physical Risk. The outputs and findings inform our risk-management decisions, but it is important to be aware of the limitations when assessing Climate Risk. Approaches to quantifying Climate Risk are nascent and data availability and coverage present challenges. This is particularly true in emerging markets where climate-risk disclosure and preparedness can be less advanced.

Currently, there is insufficient reliable data, and methodologies are simplistic and first-generation, placing some reliance on proxy information. We will refine our evaluations and methodologies progressively, as the availability and quality of data improves.

The tools are used to identify and assess:

- Physical Risk: current-day and longer-term time horizons (2050, 2100) under representative concentration pathway (RCP) scenarios 2.6, 4.5 and 8.5, for acute weather events (e.g. storms, floods or earthquakes) and chronic sea-level rise.
- Transition Risk: translates orderly, disorderly and 'hot-house' world transition scenario variables to financial impact at a client level.
- Temperature alignment: provides a temperature score to indicate client- and portfolio-level global warming potential up to 2030.

The below provides an overview of our climate-risk toolkit and how we apply it to our clients, portfolios or operations, in selected areas. For a detailed overview of our methodologies please see page 81 onwards in our 2020 TCFD report.

Figure 16: Overview of our Climate Risk toolkit and application

	Scenarios					
Data provider or partner	**Asset class or operations**	**Metrics**	**Scope**	**Time horizon**	**Scenarios**	**Application**
Munich RE ▲	• Corporate clients • Retail mortgages • The Group's offices, branches and data centres	Location-based hazard and risk scores	Acute: • Tropical Cyclone • River Flood Chronic: • Sea-Level Rise • Heat Stress Index • Precipitation Stress Index • Fire Weather Stress (climatological index) • Drought Stress Index	Current day, 2050, 2100	RCP 2.6, 4.5, 8.5	Assessing Physical Risk for: 1. Client assets and operation locations 2. The Group's location strategy for operations – branches, offices and data centres 3. Retail mortgages – portfolio concentrations by hazard type The toolkit also helps inform the Group's risk appetite across all risk types
Baringa ▲	• Corporates • Sovereigns	Financial impact	Translates transition-scenario variables to impact on income statements and probability of default.	Up to 2050	Customisable scenarios for disorderly, orderly and 'hot-house' world e.g. STEPS, NZE, NZN	Transition Risk assessments over various scenarios for corporate and sovereign clients are used for: 1. Client-level reviews as part of credit decision making 2. Portfolio concentration measures including risk appetite 3. Scenario analysis and stress testing
	• Corporates	Temperature Alignment (TA)	TA quantifies a company's impact on the climate and is calculated based on emissions intensities and volume of carbon emissions produced. It maps the company's forward-looking carbon intensity and carbon-emissions production outlook (where applicable) against a temperature score.	2030	2 degrees orderly	Reputational & Sustainability Risk assessments for CCIB clients in high carbon-emitting sectors.
S&P Global ▲	Provides additional climate data	Emissions information across clients (including history) Corporate client asset-location data	Absolute emissions (tonnes of CO_2e) and emissions intensities by revenue (tonnes of CO_2e/$ million) for Scope 1 and 2 and where available for scope 3 emissions. Geolocation for clients	Current Day and Historic	N/A	Inputs into the Group's client-level risk assessment for corporate clients and net-zero modelling.
Imperial College London ▲▲	Academic advisory and research partnership	1. Long-term research on Climate Risk. 2. Advisory on shorter-term, internally focused projects to enhance Climate Risk capabilities. 3. Training and education of our colleagues, Management Team and Board.		N/A	N/A	N/A

▲ Physical Risk ▲ Transition Risk

Recognising Climate Risk and taxonomy

In 2019, Climate Risk was incorporated in our Group-wide risk taxonomy through the ERMF. Climate Risk is defined within the ERMF as "the potential for financial loss and non-financial detriments arising from climate change and society's response to it".

Figure 17: Climate Risk taxonomy

Risk type		
Climate Risk		The potential for financial loss and non-financial detriments arising from climate change and society's response to it.
Sub-risk types		
Physical Risk		Risks arising from increasing severity and frequency of climate- and weather-related events. These events can damage property and other infrastructure, disrupt business supply chains, and impact food production. This can reduce asset values, potentially resulting in lower profitability for companies. Indirect effects on the macroeconomic environment, such as lower output and productivity, exacerbate these direct impacts.
	Acute	Specific event-driven weather events, including increased severity of extreme weather events, such as cyclones, hurricanes, floods, or wildfires.
	Chronic	Longer-term shifts in climate patterns, such as changing precipitation patterns, sea-level rise and longer-term drought.
Transition Risk		Risk arising from the adjustment towards a carbon-neutral economy, which will require significant structural changes to the economy. These changes will prompt a reassessment of a wide range of asset values, a change in energy prices, and a fall in income and creditworthiness of some borrowers. In turn, this entails credit losses for lenders and market losses for investors.

Climate Risk is considered an integrated risk type because it manifests though impacted principal risk types (PRTs) or overarching risk types. Principal risks are those risks that are inherent in our strategy and business model and are also formally defined in the ERMF. Figure 18 shows the seven PRTs that we have identified to be most materially impacted by potential climate risks, and describes transmission channels for Climate Risk manifesting as financial and non-financial risk. We manage Climate Risk according to the characteristics of these PRTs and are embedding climate-risk considerations into the relevant frameworks and processes for each.

Figure 18: Existing risk classification and climate-risk transmission channels in the context of the Group's existing risk types.

Processes for managing Climate Risk

Climate Risk appetite

A **risk appetite statement (RAS)** is the approved boundary for the risk that the Group is willing to undertake and is set within our **Risk Capacity**[3]. Our Climate RAS is approved annually by the Board.

Climate RAS:

> **"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."**

How is the Climate Risk appetite statement monitored and managed?

The RAS is accompanied by risk appetite metrics based on potential losses under different climate scenarios. We have initiated reporting risk-appetite metrics in the Group Risk Committee (GRC) and initial risk-appetite thresholds will become effective in 2022. The metrics are shown in Figure 19.

Figure 19: Climate Risk appetite metrics

Risk type	Metrics reported	Climate risks reported
Credit Risk – CPBB	Concentration of retail mortgage exposure with high gross physical (flood) risk across the Group's top 7 markets.	Physical risks: flood risk.
Credit Risk – CCIB	Net nominal exposure concentration to clients with high transition and Physical Risk, and low readiness.	
Reputational & Sustainability Risk	Net nominal exposure concentration to clients with high temperature alignment and low transition readiness.	Temperature alignment – the degree of projected warming up to 2030 under an orderly scenario.
Country Risk	Gross Country Risk exposure to countries assessed to be in very high physical and Transition Risk categories as a percentage of the Group's total exposure.	Physical and Transition Risk based on internal country-Climate Risk index.

3 Risk capacity defined as the maximum level of risk the Group can assume, given its current capabilities and resources, before breaching constraints determined by capital and liquidity requirements, internal operational environment, or otherwise failing to meet the expectations of regulator and law enforcement agencies.

Integrating climate-related risks into overall risk management

In 2021 we continued to integrate Climate Risk into existing risk-management processes, progressing from risk profiling and measurement to the initial stages of risk management. Figure 20 gives an overview of how we identify, measure and manage Climate Risk for each risk type. As methodologies and learnings emerge, we intend to refine and update our approach, and to extend the coverage of client or product groups captured.

A deeper dive into credit risk is provided on pages 43-44 of this report.

Figure 20: Overview of how we approach Climate Risk management by risk type

Risk type		Tools and methodologies to quantify	Initial scope of application or coverage	Risk management and mitigation process
Credit Risk	**CCIB** ▲▲	Tools: Physical Risk for client level operating locations using Munich Re and Transition Risk assessment using the Baringa climate change scenario modelling capabilities. Metrics from the tools are an input to a client-level risk assessment: gross Transition Risk, gross Physical Risk, Transition Risk readiness (mitigation) and Physical Risk preparedness (mitigation).	Approximately 2,000 of our top corporate clients representing approximately 80 per cent of net nominal exposure in the corporate portfolio.	In 2021, client level climate-risk assessments were carried out for almost 2,000 clients and applied to the credit-underwriting process for a pilot group of 529 clients. In 2022 we will continue to roll this out to an increasing proportion of the client portfolio equating to approximately 2,400 and 70 per cent of our corporate exposure.
	CPBB ▲	Tools: Munich Re NATHAN to assess Physical Risk: acute physical risks, such as storm risk, flood risk and wildfire risk and chronic Physical Risk, such as sea-level rise.	Over 90 per cent of retail mortgage exposure covering key markets such as Korea, Hong Kong, Taiwan, India, Malaysia, Singapore, UAE and Indonesia.	As part of quarterly credit portfolio reviews for residential mortgages, we track high Physical Risk concentrations for the markets indicated in the scope.
Operational & Technology Risk ▲			1,015 of our own branches, offices and data centres.	All new property locations are assessed for Physical Risk vulnerabilities. A pilot project considered policy and process changes required to embed Climate Risk considerations within Resilience/Business Continuity and Third-Party Risk Management.
Country ▲▲		Drawing from external benchmarks, such as Germanwatch's Climate Risk Index and ND-Gain, the Group has developed its own bespoke country-Climate Risk index that provides an internal assessment and ranks countries by vulnerability and readiness to physical and transitions risks. Countries are bucketed into ten categories and mapped to gross country risk exposures for both Transition Risk and Physical Risk separately, as shown in the metrics and targets section from page 47 of this report.	153 countries and regions globally.	The country-Climate Risk index is a factor in the setting of country-risk limits. Regional country-risk reviews for sovereign limits and credit grades include Climate Risk considerations.

▲ Physical Risk ▲ Transition Risk

Figure 20: Overview of how we approach Climate Risk management by risk type (continued)

Risk type	Tools and methodologies to quantify	Initial scope of application or coverage	Risk management and mitigation process
Reputational & Sustainability Risk 	Tools: Temperature alignment and scores from the client-level risk assessment.	Lending and capital markets transactions.	Additional Climate Risk assessment applied as part of Reputational & Sustainability Risk reviews for clients and transactions in prioritised high-carbon sectors. The assessment considers: **Client level** • Temperature alignment • Governance and disclosure • Transition readiness **Transaction level** • Emissions impact of transaction • Regional context The assessment is used to inform Reputational & Sustainability Risk decisions. This is in addition to existing environmental and social (E&S) risk management as well as our Position Statements and Prohibited Activities list. Clients or transactions rated high to very high are escalated for decision to the Group Responsibility and Reputational Risk Committee.
Compliance Risk 	Process established for tracking various Climate Risk-related regulations at Group and regional/ country level.	Global regulations in our markets.	Plans in place to meet local regulatory requirements.
Treasury Risk 	Climate Risk considerations have been part of our Internal Capital Adequacy Assessment Process (ICAAP) submissions since 2019.	Capital and liquidity impact.	The 2022 Internal Capital Adequacy Assessment Process will broadly leverage the 2021 CBES results and outputs. Design of key workstreams for integration with Treasury Risk are underway, including potential linkages to the Group Internal Liquidity Adequacy Assessment Process.
Traded Risk 	We explored potential impacts Climate Risk events as part of the existing Traded Risk stress-testing processes.	Positions booked in the Trading and Banking Books.	We manage Climate Risk as part of the Traded Risk stress-testing framework. A physical-risk-event-based scenario has been included within the 'evolving scenarios' inventory. We monitor on a weekly basis relevant changes in the market environment or positions profile and/or to position concentrations or exposures. The 2021 scenario focused on the impact from increased frequency and severity of hurricanes on commodities and rates, and the consequent impact on our market and Credit Risk positions.

 Physical Risk  Transition Risk

Credit Risk

For most banks, Credit Risk presents the largest proportion of risk on their books. The industry has developed sophisticated Credit Risk management frameworks, which provide a baseline level of effective mitigation from risks. However, these industry-wide, existing processes have not yet evolved to account for the unprecedented level and type of risk that climate change brings, and additional climate-risk-specific analysis is required as the tools and methodologies mature to quantify and more accurately reflect Climate Risk.

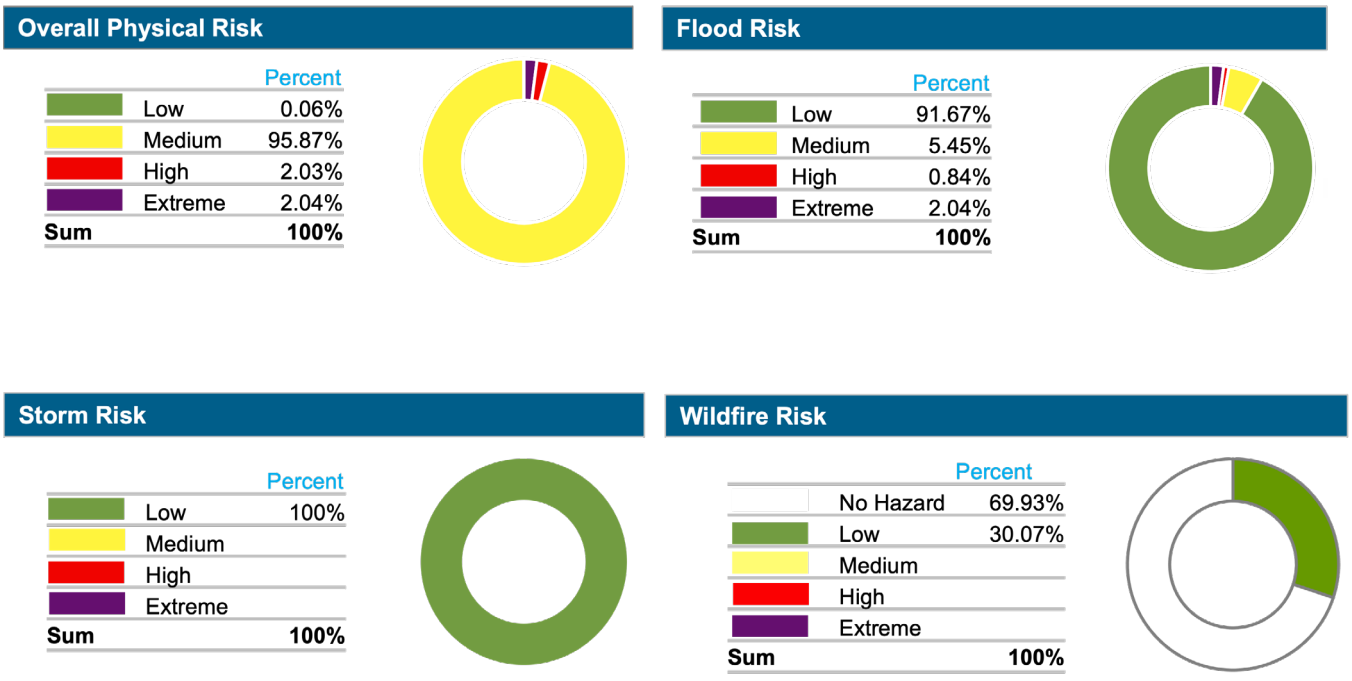
Consumer, Private and Business Banking (CPBB) Credit Risk

For CPBB, we have prioritised retail mortgages and analysed over 90 per cent of our mortgage exposure at a property level for Physical Risk. This includes property-level risk assessment in our main markets – Korea, Hong Kong, Taiwan, India, Malaysia, Singapore, the UAE and Indonesia. Acute Physical Risks assessed include storm risk, flood risk and wildfire risk and forward-looking Physical Risks include sea-level rise at 2100.

We use the output of the Physical Risk assessments of our retail mortgagee locations to inform credit portfolio quarterly reviews and the metrics, based on outputs from the Munich Re NATHAN tool, show our exposure to gross Physical Risk. These are monitored as part of management level risk appetite metrics.

Below shows an example of the outputs of an analysis of our Singapore mortgage portfolio Using Munich Re's NATHAN tool. Extreme flood risk represents around 2 per cent of the Singapore mortgage portfolio, with around 1 per cent categorised as high risk. However, this is gross risk and a limitation of the tool is that it does not factor in adaptation measures, such as water-management infrastructure like dams. Nor does it consider the quality of building construction, which in locations such as Singapore or Hong Kong is designed to be more able to withstand hazards such as tropical storms and cyclones.

Figure 21: Analysis of our Singapore mortgage portfolio assessed by Physical Risk



Corporate, Commercial and Institutional Banking (CCIB) Credit Risk

Climate change presents Credit Risk when physical and transition risks disrupt a client's existing business models or operations, thereby affecting their capacity to generate the income required to repay debt, or the capital and collateral required to back the loan.

We have built detailed client-level climate-risk assessments, which we have applied to nearly 2,000 of the Group's corporate client entities. The client-level Climate Risk assessment contains a range of questions under the five pillars shown in Figure 22. It asks for quantitative and qualitative information to assess the client's financial Climate Risk, and takes into consideration any mitigation or adaptation activities or plans undertaken by the client. The outputs of the assessment is a client climate-risk score. We are building the assessment into our credit-underwriting process, to assess the potential impact of Climate Risk on the creditworthiness of a client. In 2021 we piloted this approach as part of CCIB credit processes for just over 500 clients, and in 2022 we plan to continue to roll it out to an increasing proportion of the corporate client portfolio, aiming to cover 70 per cent of our exposure across corporates, with a greater than 90 per cent coverage across the high-transition-impact sectors such as Power, Metals and Mining and Oil & Gas.

We note that the quality of our assessment depends on the quality of our clients' disclosures or the information we receive from each client or third party. We expect this quality to improve in step with reporting.

Figure 22: Our Climate Risk client-level assessment for Credit Risk and data sources

Standard Chartered's corporate client Climate Risk assessment framework

Governance and disclosures	Gross physical risk	Physical Risk adaptation	Gross Transition Risk	Transition Risk mitigation
Quality and level of client's governance and strategic linkage to climate-related risk and opportunities	Current day and forward-looking Physical Risk assessment of client's material operating locations/assets	Level of client's acknowledgement and relevant adaptation measures (e.g. construction, insurance)	Client's revenue/ production mix reliance on high carbon, potential financial impact from an orderly/ disorderly transition	Level of client's emission measurement, emission reduction targets, investment in low carbon, plan for low carbon transition

Source data

TCFD disclosure, CDP, ESG reports, annual reports	S&P (asset level data) and Munich Re's NATHAN	TCFD Disclosures, CDP, ESG reports and annual reports	S&P for client-level emissions data, Baringa's climate-change modelling	TCFD disclosures, CDP, ESG reports and annual reports

Client engagement

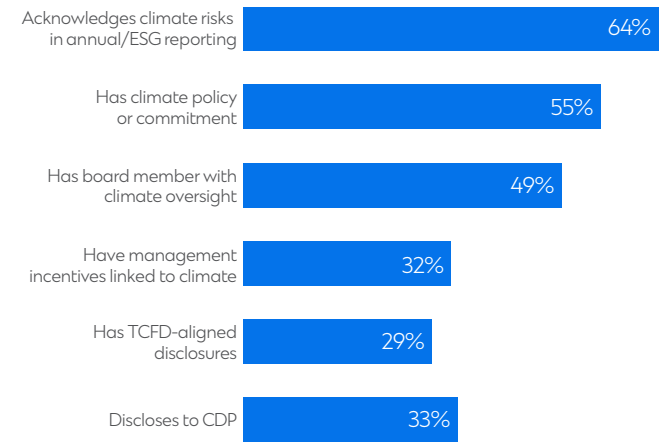
We have engaged with our clients to better understand how they are approaching and preparing for Climate Risk and to identify how we can support their transition. In 2021, we undertook our biggest ever climate-related client outreach, and many of our clients reported that Standard Chartered had been the first bank to provide them with climate-risk assessment and insight. As part of the outreach, we developed client-level climate-risk assessments for almost 2,000 clients and held meetings with 192 clients to discuss the results of the assessment in greater detail.

Results and key insights gained from the assessment

Governance and disclosures

This pillar of the assessment seeks to understand how climate-related responsibilities are managed within an organisation, and gauges the quality of the client's disclosures. Figure 23 shows the aspects of climate-related governance that we assessed. A stronger score indicates a greater degree of client readiness to respond to climate-related risks and opportunities. Most (over 64 per cent) of clients acknowledge or show awareness of Climate Risk in their annual, ESG or sustainability reports, and over half have a policy or commitment on climate. However, only 29 per cent had TCFD-aligned disclosures, indicating the challenge in relying on public disclosures alone for assessing Climate Risk, and reinforces the need for greater and consistent climate disclosures.

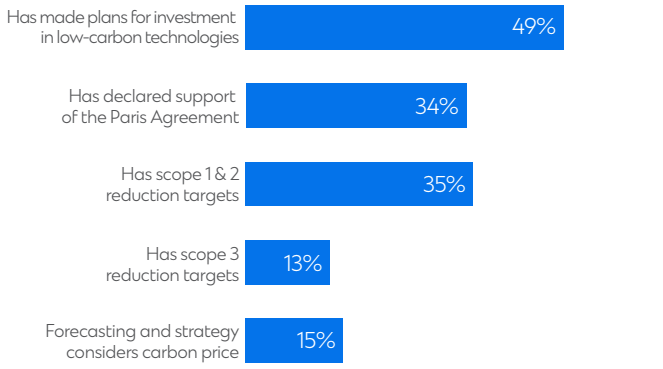
Figure 23: Results from our client-level Climate Risk assessment on governance and disclosure



Transition Risk readiness

This pillar of the assessment is based on a comprehensive in-house questionnaire which covers the intent, progress and capability of the client to mitigate the risks in transitioning to a net-zero economy. Only 35 per cent of clients report scope 1 and 2 emissions targets, with only 13 per cent reporting targets for Scope 3. Roughly half have made plans to invest in low-carbon technologies in the next five years to prepare for a low-carbon transition.

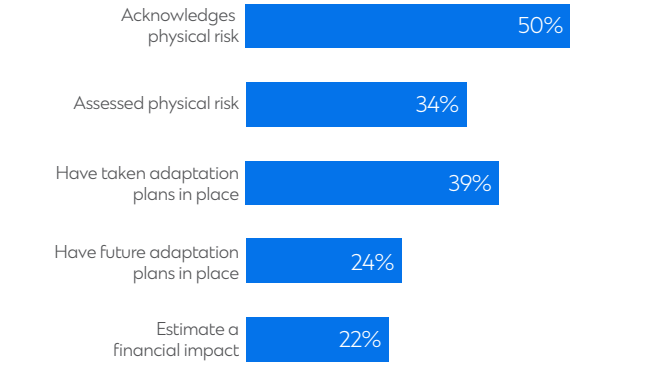
Figure 24: Results from our client level Climate Risk assessment on transition readiness



Physical Risk readiness

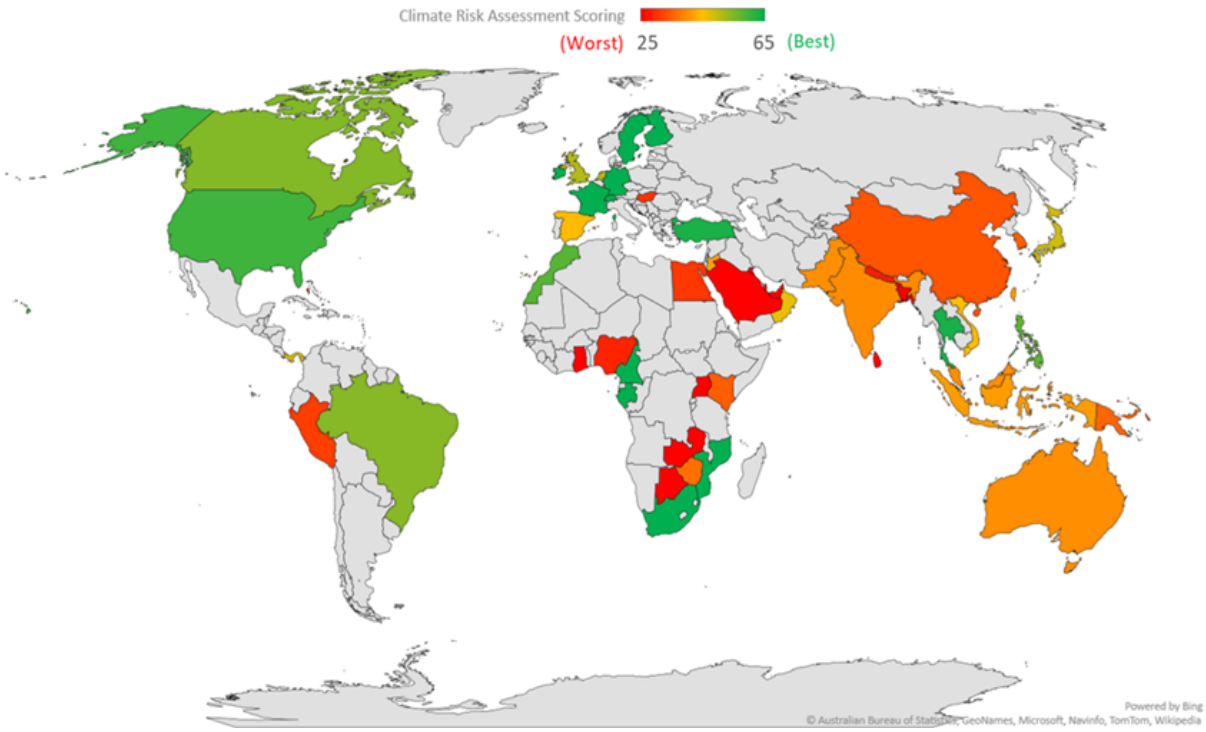
Physical Risks can be mitigated with anticipatory adaptation strategies. Forward-thinking clients are already starting to assess the climate resilience of their assets and supply chains, which informs their adaptation strategy. Through this pillar of the assessment, we are seeking to assess if the client has quantified the financial impact of physical risks and understand if they are taking proportionate adaptation actions, for example through their asset acquisition strategy, or enhanced engineering and construction measures. Around half of clients acknowledge Physical Risk, but only 34 per cent have undertaken assessments and only 39 per cent have taken some form of adaptation measures. The number preparing for future Physical Risk is even lower and only about one quarter have future adaptation plans.

Figure 25: Results from our client level Climate Risk assessment on Physical Risk readiness



How do different regions fare in their risk and preparedness?

Figure 26: Client-level Climate Risk assessment scores by region



	Number of clients	Overall score	Governance & disclosures	Gross Physical Risk	Physical Risk adaptation	Gross Transition Risk	Transition Risk Mitigation
Asia	1,238	40%	36%	67%	27%	36%	36%
Africa & Middle East	340	38%	34%	69%	25%	33%	32%
Europe & Americas	360	51%	53%	78%	39%	37%	50%
Total	**1,940***	**42%**	**39%**	**70%**	**29%**	**35%**	**38%**

*Assessment is based on 1,940 client entities – two entities did not fall into the regions displayed and hence only form part of the total.

The average score in our client-level Climate Risk assessment is 42 per cent. Scores were on average better in developed economies and regions (EU, US, Australia) and on average lower in the emerging markets (AAME), and this observation was mostly consistent across the assessment pillars. Physical Risk adaptation scored the lowest across all five questionnaire sections, indicating a low readiness of corporates to potential climate-related events. Overall levels and consistency in the availability of climate information from public disclosures is still low, and in many cases absent, which highlights the importance of:

- Carrying out direct engagement with clients and supporting them on their transition journey.
- Using a variety of tools and other sources in addition to inform Climate Risk assessments.
- Initiatives such as the TCFD in driving consistency and alignment of climate-related disclosures.

Benefits from the client engagement

We learned a lot from undertaking the client assessments, and so did our clients. The benefits included:

- Internal capability building of our client bankers and risk teams. Around 1,940 staff completed internal climate-risk training in preparation for undertaking the client engagement.
- Improvement of our data coverage, helping us to develop data, especially where this was not publicly available, and strengthening the quality of our risk assessments and modelling capabilities. The client-level risk assessments are now being integrated into the CCIB credit risk underwriting process.
- Clients were interested in seeing their Climate Risk profiles, as well as the tools and methodologies we use to quantify their Transition Risk. They were also interested in how to improve their climate-related reporting and disclosures.

Metrics and Targets

Throughout 2021, we have continued to make progress on assessing climate-related risks and opportunities, improving our governance and risk management processes, as well as developing stronger metrics and targets

In this section

Metrics and Targets

Throughout 2021, we have continued to make progress on assessing climate-related risks and opportunities, improving governance and risk management processes, as well as developing stronger metrics and targets.

We consider metrics in line with the three pillars of our climate-change approach:

A. Accelerating sustainable finance by supporting the net zero transition by 2050 and providing finance in the locations most vulnerable to, and least prepared for, Climate Risk.

B. Reducing our direct and financed emissions in alignment with our aim to reach net zero in our operations by 2025 and financing by 2050.

C. Managing the financial and non-financial risk from climate change by developing the ability to systematically identify and assess Climate Risk, and building this into our mainstream risk-management practices and governance.

Figure 27: Our approach to climate change

A. Metrics to accelerate sustainable finance

Our objective is to support the net-zero transition by 2050, providing finance in the locations most vulnerable to, and least prepared for Climate Risk. In support of this goal, we have set a target to mobilise $300 billion aligned to our Green and Sustainable Product Framework and Transition Finance Framework between 2021 and 2030, including contributions from pre-existing targets for clean technology and sustainable infrastructure. Mobilisation targets measure the total value of transactions we are involved in. These transactions generate revenue for the Group, while contributing toward our intention to achieve $1 billion of CCIB Sustainable Finance revenues in the medium term.

Transactions may include non-lending activities such as debt capital markets or advisory services, or lending activities.

Lending activities generate assets which form part of our sustainable finance asset pool, and which can in turn support issuance of sustainable bonds. Lending activities also contribute to our Scope 3 financed emissions which we have assessed for the first time in 2021 using 2020 baseline data.

In time and as consistent methodologies become available, we expect to include facilitated emissions from non-lending activities.

In this section, we highlight the progress we have made in our 2021 Business Aspirations, our 2022 Business Aspirations and our approach to net zero in financing.

Read more on our net-zero transition plans and net-zero methodology in our white paper.

Figure 28: 2021 Sustainability Aspirations: Business

	Timeline	Status	Progress
Infrastructure			
Facilitate project financing services for $40 billion of infrastructure projects that promote sustainable development that align to our verified Green and Sustainable Product Framework	Jan 2020–Dec 2024	○	Facilitated $9.6 billion, bringing the total facilitated since January 2020 to $12 billion.
Climate change			
Facilitate $35 billion worth of project financing services, M&A advisory, debt structuring, transaction banking and lending services for renewable energy that align to our verified Green and Sustainable Product Framework	Jan 2020–Dec 2023	✓	Facilitated $22 billion, bringing total facilitated since January 2020 to $40.4 billion. We have therefore achieved this Aspiration ahead of the end 2023 target.
Only provide financial services to clients who are: • by 2024, are less than 80% dependent on thermal coal (based on % EBITDA at group level) • by 2025, are less than 60% dependent on thermal coal (based on % EBITDA at group level) • by 2027, are less than 40% dependent on thermal coal (based on % EBITDA at group level) • by 2030, are less than 5% dependent on thermal coal (based on % EBITDA at group level)	Jan 2020–Jan 2030	○	In 2020, we ceased new business with four clients and have now exited these relationships subject to any outstanding contractual arrangements. In light of the recent strengthening of our coal policy, we are now on track to transition or exit all clients at an entity level that are greater than 80% dependent on thermal coal, subject to any outstanding contractual arrangements. In 2021, we changed from EBITDA to revenue basis.
Commit to measuring, managing and reducing emissions associated with our financing of clients to support our objective to achieve net zero by 2050. We will develop and consult with shareholders, investors, clients and civil society on a definition, methodology, targets and timeline	Jan 2020–Dec 2021	✓	In October 2021, we announced ambitious new targets to reach net-zero carbon emissions from our financed activity by 2050. We have further incorporated these new targets into our 2022 Aspirations.
Impact finance			
Develop a tailored Impact Profile for all Private Bank clients providing a framework that enables them to understand their passions and harness capital market solutions to support the Sustainable Development Goals (SDGs)	Jan 2020–Dec 2024	△	The goal of the Impact Profile tool was to include ESG elements as a part of understanding a client's financial profile and to enable conversations with clients based on preferences. As part of our October 2021 net-zero approach, we plan to integrate ESG considerations in our wealth-management advisory which are incorporated into our updated 2022 Aspirations and will replace this Aspiration.

Concluded in the year
✓ Achieved △ Not achieved

Ongoing aspirations
○ On track △ Not on track

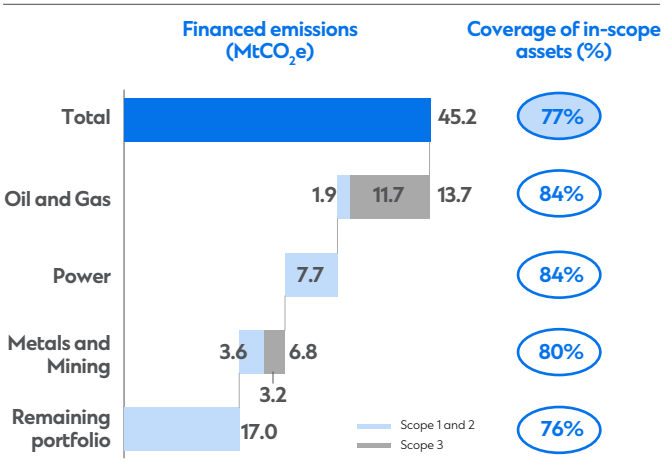
Total financed emissions by sector

In 2021, we measured the absolute financed emissions baseline of our corporate lending portfolio, focusing on $74.8 billion of assets (equating to a coverage of 77 per cent of our in-scope assets of $97.3 billion), equal to 45.2 million metric tonnes of carbon dioxide equivalents (45.2 $MtCO_2e$) with 2020 baseline data.

There is currently insufficient available data to accurately reflect the financed emissions of the remaining 23 per cent of our in-scope assets. A linear extrapolation would translate to an overall baseline of approximately 59Mt CO_2e. The baseline, projections and targets will be refined, adjusted and restated over time as data coverage and granularity improve, emissions scenarios improve, external policy and regulatory environments expand and industry standards develop.

Read more on our methodology and net-zero ambitions in our white paper

Figure 29: Total financed emissions by sector



As part of our net-zero approach we aim to launch green mortgage products across our key markets, and to report mortgage emissions with a view to setting targets by 2023. To support this agenda and help clients make greener choices, in 2021 our CPBB segment launched green mortgages in Hong Kong, Singapore and Taiwan.

As part of our net-zero approach, we also aim to leverage our market leading wealth management platform to double Sustainable Investing assets under management and integrate ESG considerations into our wealth management advisory activities by 2025.

In 2021, we published our second Sustainable Finance Impact Report. It found that our green lending avoided 1.4 million tonnes of CO_2 emissions from July 2020 to June 2021, a 264 per cent increase year-on-year in CO_2 avoided, equivalent to more than 3 million economy-class aeroplane seats from London to Singapore. Our green assets in least developed, lower- and lower-middle income markets, as defined by the Organisation for Economic Cooperation and Development Assistance Committee (OECD DAC), have achieved significantly more impact in terms of CO_2 emissions avoided per dollar invested than our green asset base in the rest of the world.

This reinforces the findings of our Opportunity 2030 Report and emphasises the need to channel finance to the markets in our footprint where it matters most and can have the greatest impact.

Data from our Sustainable Finance Impact Report can be found in Appendix 2.

Read our Sustainable Finance Impact Report and methodology:
sc.com/SFimpactreport

Read our Sustainable Finance Frameworks:
sc.com/sustainablefinanceframework

Read our Opportunity 2030 Report:
sc.com/opportunity2030

Figure 30: 2022 Sustainability Aspirations: Business

Theme	Aspiration	Target
Green and Transition Finance Achieving a just transition will require directing capital and specialised support to the regions that need it most to drive sustainable economic growth	Mobilise $300 billion aligned to our Green and Sustainable Product Framework and Transition Finance Framework, including contribution from existing target to:	Jan 2021 – Dec 2030
	Mobilise project financing services for $40 billion of infrastructure projects that promote sustainable development that align to our verified Green and Sustainable Product Framework	Jan 2020 – Dec 2024
	Launch and grow green mortgages in key markets across our footprint	Jan 2022 – Dec 2022

B. Metrics to reduce our direct and financed emissions

We are committed to improving our environmental performance and reducing the direct environmental impact of our branches and offices. To do this, we measure and manage energy and water efficiency, greenhouse gas (GHG) emissions and paper use closely, verifying our performance through third- party assurance.

We have measured and reduced our GHG emissions since 2008. Our Scope 1 and 2 operational emission-reduction target has been validated by the Science Based Targets initiative (SBTi) as being in line with a well-below-two-degrees-Celsius warming scenario.

Through our Sustainability Aspirations, we have set more ambitious targets to achieve net-zero emissions and ensure we only consume renewable energy across our portfolio by 2025. In partnership with our long-term strategic real estate suppliers such as CBRE and JLL, we are continually reviewing our direct fuels and on-site renewable energy sources. We are constantly improving our facilities to deliver the efficiency improvements needed across our properties to meet these challenging targets.

In 2021 energy and emissions reductions initiatives included clean-power purchase agreements, water recycling, solar rooftops and on-site waste composting. Together with a 5 per cent reduction in our real-estate portfolio, these direct initiatives reduced our CO_2 emissions by 27 per cent year-on-year, and our energy consumption by 15 per cent to 183 GWh. Investment in energy-efficient products accounted for 11 GWh of this reduction, resulting in a more efficient and lower-carbon portfolio.

Figure 31: 2021 Sustainability Aspirations: Operations

	Timeline	Status	Progress
Environment			
Reduce annual greenhouse gas (GHG) emissions (Scope 1 and 2) to net zero by 2030 with an interim target: Dec 2021: 106,000 tonnes CO_2 equivalent (tCO_2e) Dec 2025: 60,000 tCO_2e	Jan 2019–Dec 2030*	○	Surpassed interim targets, achieving 85,662 tCO_2e based on continued efficiency work across the estate, plus an accelerated renewable energy programme. *In 2021 we brought forward to December 2025 our ambition to achieve net-zero GHG emissions in our operations.
Source all energy from renewable sources	Jan 2020–Dec 2030*	○	Renewable energy was up 89% in 2021, representing 15% of total energy consumed (28.2 of 183 GWh) globally, an increase from 7% (14.9 GWh) in 2020. *In 2021, we brought forward our target to achieve net zero emissions and ensure we only consume renewable energy across our portfolio to 2025.
Join the Climate Group 'RE100'	Jan 2021–Dec 2021	✓	We engaged with RE100 during the year as they developed criteria for financial institutions seeking to become RE100 members. Following finalisation of those criteria, we joined RE100 as a standard member, which was formalised in January 2022.

Concluded in the year: ✓ Achieved △ Not achieved

Ongoing aspirations: ○ On track △ Not on track

Our reporting criteria set out the principles and methodology for measuring our emissions, and our Scope 1 and 2 emissions, as well as water and waste data, are independently assured by Global Documentation.

+ Read the principles and methodology for measuring our GHG emissions at **sc.com/environmentcriteria**

+ Read the independent assurance for our energy and GHG emissions (Scope 1 and 2) at **sc.com/environmentalassurance**

Figure 32: Greenhouse Gas Emissions from direct operations

Indicator	2021	2020	2019	Unit
Scope 1 emissions (Combustion of fuel)	2,902	3,988	4,542	Tonnes/CO_2e/year
Scope 2 emissions (purchased electricity) location based methodology	82,761	113,870	141,771	Tonnes/CO_2e/year
Total Scope 1 & 2 emissions	**85,662**	**117,858**	**146,313**	**Tonnes/CO_2e/year**

Figure 33: 2022 net-zero targets in our Scope 1 and 2 operational targets

Result	Target 2022 value	Target 2025 value
Group water consumption	0.45 kilo litres/m^2/year	0.40 kilo litres/m^2/year
Group energy consumption	190 kWhs/m^2/year	175 kWhs/m^2/year
Group Scope 1 & 2 Emissions (SBT)	50,000 tonnes CO_2e/year	18,000 tonnes CO_2e/year
Group Scope 1 & 2 Emissions (RE100)	50,000 tonnes CO_2e/year	0 tonnes CO_2e/year

Figure 34: 2022 Sustainability Aspirations: Operations

Theme	Aspiration	Target
Environment Reducing our own impact on the environment will protect our planet for the benefit of our communities	Reduce annual Scope 1 & 2 greenhouse gas emissions to net zero by 2025	Jan 2019 – Dec 2025
	Source all energy from renewable sources	Jan 2020 – Dec 2025

In our supply chain

We continue to drive emission reductions towards our targets and with the backdrop of COVID-19 our scope three travel emissions continued to be dramatically lower than expected. While travel is expected to rise in 2022, we have continued to set targets for reduction against our 2019 baseline.

In 2021 we partnered with a reputable Climate Consultancy Firm to estimate the Scope 3 CO_2 emissions of our purchase goods and services, covering the spend of our suppliers in 2019 and 2020. The methodology primarily used emission factors as well as emissions reported by vendors to CDP. A small number of vendors were able to report own emissions based on Primary data points. The resulting estimations were used to engage each of our highest emitting suppliers to understand their climate change actions, metrics, goals, and overall alignment with the Group's sustainability agenda.

The process for Scope 3 emissions measurement of "purchased goods and services" is being embedded into our wider yearly reporting process and is expected to be executed every Q1 based on previous year's vendors spend.

Figure 35: 2021 Sustainability Aspirations: Operations

	Timeline	Status	Progress
Environment			
Achieve and maintain flight emissions 28% lower than our 2019 baseline of 94,000 tonnes.	Jan 2021–Dec 2023	○	Flight emissions reduced 96% from 2019's baseline, far exceeding the target. This reduction was primarily driven by the COVID-19 pandemic reducing all travel.*
Develop a methodology to measure Scope 3 emissions from our supply chain.	Jan 2021–Dec 2021	✓	Methodology was approved by the Sustainability Forum in June 2021. Total Scope 3 emissions from vendors was estimated to be 365,911 CO_2e (t) in 2020. 2021 figures are in progress and will be reported in 2022.
Offset all residual emissions from our operations (Scope 1 and 2, Scope 3 flights, waste and data centres).	Jan 2021–Dec 2021	✓	We have achieved our 2021 carbon-offset Aspiration to offset all residual emissions through the following providers: First Climate, CiX and Rabobank. Total volume of emissions offset was 136,000 tonnes at an average price of $7.65/tonne.

*Significant reductions in 2021 are due to COVID restrictions on flying and work-from-home mandates in multiple markets.

Concluded in the year
✓ Achieved △ Not achieved

Ongoing aspirations
○ On track △ Not on track

Figure 36: Scope 3 Operational Emissions

Indicator	2021	2020	2019	Unit
Scope 3 emissions with distance uplift (air travel)	3,654	33,811	94,043	Tonnes CO_2e/year
Scope 3 emissions (outsourced data centres)	43,132	29,562	46,362	Tonnes CO_2e/year
Scope 3 emissions (vendors*)	In progress/to be reported in 2022**	365,911	424,285	Tonnes CO_2e/year
Total Scope 3 emissions	**46,786**	**429,284**	**564,690**	**Tonnes CO_2e/year**

*Non-vendor third parties excluded from the calculations.
**Estimated emissions for 2019 and 2020 added to figures. 2021 estimation to be available in Q2 2022.

In line with our 2021 Sustainability Aspiration we have offset our operational Scopes 1-3 (flights and data centres) residual emissions through a variety of high-quality and verifiable offsets shown in Figure 37. We understand that carbon offsetting is only an interim solution. However, we believe it is the best way to take accountability for the carbon we emit until it can be eliminated at source. In addition, by creating an internal price for carbon, we will further encourage behavioural change to reduce emissions.

Figure 37: Volume, project and type of carbon credit purchased in 2021

Provider	Carbon Credit Type	Project	Market	Retirement registry	Vintage	Volume (tonnes CO_2e)
First Climate	Avoidance	Fuel Efficient Cookstoves	Uganda	Gold Standard Impact Registry	2016	115,000
Rabobank	Sequestration	Smallscale Agroforestry	Tanzania	Acorn Carbon Registry	2021	6,000
			Ivory Coast	Acorn Carbon Registry	2021	8,000
			Uganda	Acorn Carbon Registry	2021	2,000
CiX Auction	Sequestration	Qianxinan Afforestation Project in Guizhou Province	China	Verra Registry ID 1847	2017 – 2019	1,500
	Sequestration	Guinan Afforestation Project	China	Verra Registry ID 2070	2018	1,000
	Avoidance	Rimba Raya Biodiversity Reserve Project	Indonesia	Verra Registry ID 674	2018	1,100
	Sequestration	The Kasigau Corridor REDD Project – Phase II The Community Ranches	Kenya	Verra Registry ID 612	2016	1,500

Figure 38: 2022 Sustainability Aspirations: Operations

Theme	Aspiration	Target
Environment Reducing our own impact on the environment will protect our planet for the benefit of our communities	Offset all residual emissions from our operations (Scopes 1 and 2, Scope 3 flights, waste and data centres), doubling our average cost from $7.65 per tonne in 2021 to $15 per tonne in 2022	Jan 2022 – Dec 2022
	Achieve and maintain flight emissions 28% lower than our 2019 baseline of 94,000 tonnes	Jan 2021 – Dec 2023

Our clients

We continue to work with our clients to improve their environmental and social (E&S) performance with specific timebound action plans to manage our financed emissions. Where clients are unable or unwilling to meet our requirements, we will ultimately exit those relationships, subject to contractual obligations.

In November 2021 we further tightened our coal policy which meant changes to how we measure clients on their thermal-coal dependency. Specifically, we now test dependency based on revenue from thermal coal rather than EBITDA and we carry out the test at client entity-level rather than at client group-level.

In 2021 we made great progress on our Sustainability Aspirations in this area (Figure 39). In addition, we updated our Position Statements covering all sensitive sectors. We introduced enhanced requirements which will become effective from 2022, with the exception of additional restrictions placed on thermal-coal-dependent clients, which were effective immediately. The enhanced requirements on thermal-coal clients at the client group-level include (i) review of the client group's transition strategy, (ii) confirmation that any financial services provided to the client group will not and cannot be used for thermal coal, and (iii) support from our Group Responsibility and Reputational Risk Committee (or delegate). The form of confirmation that is sought from client groups, relating to restrictions on financial services linked to thermal coal, are determined on a case-by-case basis and, in the case of financing transactions, may include contractual restrictions on use of proceeds.

Read more about our approach to coal in our Fossil Fuel and Extractive Industries Position Statement

Figure 39: 2021 Sustainability Aspirations: Business

	Timeline	Status	Progress
Climate change			
Only provide financial services to clients who are: • by 2024, less than 80% dependent on thermal coal (based on % EBITDA at group level) • by 2025, less than 60% dependent on thermal coal (based on % EBITDA at group level) • by 2027, less than 40% dependent on thermal coal (based on % EBITDA at group level) • by 2030, less than 5% dependent on thermal coal (based on % EBITDA at group level)	Jan 2020–Jan 2030	○	In 2020, we ceased new business with four clients and have now exited these relationships subject to any outstanding contractual arrangements. In light of the recent strengthening of our coal policy, we are now on track to transition or exit all clients at an entity level that are greater than 80% dependent on thermal coal, subject to any outstanding contractual arrangements. *In 2021, we changed from EBITDA to revenue basis.
Commit to measuring, managing and reducing emissions associated with our financing of clients to support our objective to achieve net zero by 2050. We will develop and consult with shareholders, investors, clients and civil society on a definition, methodology, targets and timeline	Jan 2020–Dec 2021	✓	In October 2021, we announced ambitious new targets to reach net-zero carbon emissions from our financed activity by 2050. We have further incorporated these new targets into our 2022 Aspirations.

Figure 40: 2022 Sustainability Aspirations: Business

Theme	Aspiration	Target
Climate Climate change is one of today's greatest challenges and addressing it is essential to promoting sustainable economic growth	Measure, manage and reduce emissions associated with our financing via the implementation of our net-zero roadmap	Jan 2022 – Dec 2022
	Only provide financial services to clients who are: • by 2024, less than 80% dependent on thermal coal (based on % revenue); • by 2025, less than 60% dependent on thermal coal (based on % revenue); • by 2027, less than 40% dependent on thermal coal (based on % revenue); • by 2030, less than 5% dependent on thermal coal (based on % revenue)	Jan 2020 – Jan 2030
	Achieve emissions reduction in our most carbon-intensive sectors of: • 63% in Power (Scopes 1 and 2 intensity); • 33% in Steel Producers (Scopes 1 and 2 intensity); • 33% in Mining (ex Coal) (Scopes 1 and 2 intensity); • 30% in Oil and Gas (Scopes 1, 2 and 3 intensity), and; • 85% emissions reduction in coal mining (Scopes 1, 2 and 3 absolute)	Jan 2020 – Dec 2030
	Measure and report mortgage emissions with a view to setting targets by 2023	Jan 2022 – Dec 2023

Exposure to high-carbon sectors

We have extended our financed emissions analysis and disclosure on our exposure to high-carbon sectors (Figure 41).

Exposure numbers provided are on-balance-sheet (i.e. drawn funding) loans and advances per sector as per the ISIC codes presented, in accordance with IFRS 9 – Financial Instruments in $ millions. The disclosure further provides the committed facilities available (not funded) and therefore not on the Groups balance sheet as per IFRS 9. Closed transactions include both financial and advisory transactions.

As we noted in our 2020 report, exposures to specific ISIC codes may not be an optimal way to understand a financial institution's alignment to climate goals or the financial risks it faces from climate change. Granular bottom-up analysis is required to assess those risks. Our existing classification system does not capture the nature of the transactions explicitly, e.g. the change in exposure to the power-generation sector may be based on new loans and advances to companies predominantly operating in the renewable energy sector or sustainable finance transactions (for example sustainability-linked facilities) to support decarbonisation of current operations of utility companies. As reporting efforts harmonise around green, sustainable and transition taxonomies, we will evolve our reporting accordingly.

Figure 41: Exposure to high-carbon sectors – loans and advances

		2021		2020		2019			
Sector	ISIC(s)	Loans and advances (drawn funding)	Undrawn commitments and financial guarantees	Loans and advances (drawn funding)	Undrawn commitments and financial guarantees	Loans and advances (drawn funding)	Undrawn commitments and financial guarantees	Percentage of loans and advances with < 1 year maturity in 2021	#Closed transactions 2021[4]
Automotive	3853	2,818	7,563	3,730	7,263	3,381	4,911	73%	9
Cement	3640, 3650	1,123	1,541	1,171	2,148	1,203	2,452	86%	1
Steel	3710	1,758	1,218	1,998	1,236	2,703	1,379	75%	3
Coal	2100	133	59	180	40	282	110	14%	1
Oil & Gas	2200, 2201, 2202, 2203	4,018	16,378	4,880	16,686	5,306	15,182	57%	26
Power	4010	4,729	8,595	4,046	7,544	3,865	5,165	35%	46
Shipping	LEID tagging	6,334	3,533	5,842	4,283	5,855	4,319	26%	54
Aviation	7131	2,846	1,766	3,697	1,987	3,296	2,234	14%	16
Total		**23,759**	**40,653**	**25,544**	**41,187**	**25,891**	**35,752**		**156**

4 Transactions refers to the provision of services to a client in relation to a project or asset, governed by a specific agreement with that client, including advisory services.

C. Managing the financial and non-financial risk from climate change

In this section we provide some early stage prototype metrics that provide quantitative estimates of gross transition and gross physical risks[5]. These are based on the tools and approaches explained in the Scenario Analysis and Risk Management sections of this report and are used to inform risk management for each of the Principal Risk Types (PRTs) integrated with climate-related risks. Depending on the PRT, metrics are used for risk-management activities and processes spanning across stress testing, transaction assessments, client reviews, portfolio assessments, risk-appetite metrics and management information.

For all the metrics presented, there are challenges with availability of reliable data, and methodologies are simplistic and first-generation, placing some reliance on proxy information. Our evaluations and methodologies will be progressively refined as data availability and quality improves.

Credit risk

CCIB

Our approach to Transition Risk assessment is granular and data-led, covering a broad range of sectors and at a company level where data is available. We apply the NGFS scenarios described in pages 29-31. We use Baringa's climate-change scenario model, which helps us to assess potential credit-grade movements for our corporate clients over a 30-year time horizon. This is shown in Figure 42, and is based on a sample of 1,660 corporate client entities. We have used the MSCI Market Classification to assign countries or regions as developed or emerging markets.

Insights

- Potential climate risks are likely to impact differently, depending on the region and sector. Sectors most sensitive to policies and actions that reduce demand for, and increase the cost of, fossil fuels are projected to see larger downgrades over a 30-year period. Oil & Gas, Metals & Mining, Transportation, Automotive and Commercial Real Estate are the sectors most impacted.
- The impact across emerging markets is expected to be higher than that in developed markets. This supports our strategic goal of growing transition finance across emerging markets.

Caution about the metrics

- Scenario based potential credit downgrades are one approach for estimating future Transition Risk. The probability of default metrics that inform potential credit downgrades capture the potential impact to clients' financials under different transition scenarios.
- The potential credit downgrades estimated do not factor in the mitigation actions and transition actions our clients and the Group will undertake take over the next 30 years.
- The results indicate a 'what if' analysis, and not a 'what is likely to happen' view.
- As climate action increases globally, clients, sovereigns and banks are likely to take additional mitigation measures to manage transition risks.
- A 30-year time period inherently brings challenges around forecasting likely outcomes, due to the uncertainties associated with the speed and direction of transition, including breakthrough technological developments, sovereign policies and management responses.

Figure 42: Projected potential average credit grade downgrade by 2050 based on our climate scenario analysis of the corporate portfolio

	Developed Markets			Emerging Markets		
	2 Degree Orderly	2 Degree Disorderly	4 Degree 'Hot-House'	2 Degree Orderly	2 Degree Disorderly	4 Degree 'Hot-House'
Automobiles & Components	3	3	4	2	3	4
Construction	1	2	2	2	2	4
Consumer Durables & Apparel	2	2	3	2	2	4
CRE	2	2	3	3	3	5
Metal & Mining	5	5	2	3	4	4
O&G	7	7	2	6	6	4
Telecomms	0	0	2	2	3	4
Transportation	3	4	2	4	4	4
Utilities	1	1	2	3	4	4
Total portfolio	**3**	**3**	**3**	**3**	**3**	**4**

5 Please note that any metrics, estimates, evaluations, balances or results within this report are not a reflection of the aggregate metrics, estimates, evaluations, balances or results that informed the Group's final submission to the Bank of England's Climate Biennial Exploratory Scenario (CBES) submission.

CPBB

We have assessed current and forward-looking physical risks at a property level for eight markets, covering more than 90 per cent of our total residential mortgage exposure. Whilst we disclose examples of initial gross risk results in this report, this is an evolving area and we fully expect to refine our approach and understanding on quantification of such risks.

There are challenges with availability of reliable data, and methodologies are simplistic and first-generation, placing some reliance on proxy information. Our evaluations and methodologies will be progressively refined as data availability and quality improves.

Figure 43: Assessment of gross Physical Risk profile for retail mortgages showing outstanding exposure subject to very high gross Physical Risk

	Outstanding exposure at very high gross Physical Risk (%)								
Physical Risk Event	**Korea**	**Hong Kong**	**Taiwan**	**India**	**Malaysia**	**Singapore**	**UAE**	**Indonesia**	**Globally**
Flood (Acute)	13%	40%	12%	20%	6%	2%	17%	21%	22%

Caution about the metrics

The results do not factor in existing adaptation measures, governmental policies to protect and build for changing weather, and structural adaptation (e.g. age and quality of construction, or flood defences and dams protecting the property). Over time, sovereigns and policy makers are expected to drive market trends such as investment in adaptation financing, technological advancements, innovative risk transfer and mitigation approaches to combat the potential impacts of climate change.

These metrics have been integrated into mainstream risk reporting, to develop risk profiles, and explicit consideration of physical risks into the mainstream risk management and governance processes.

Reputational & Sustainability Risk

We use temperature alignment as a metric to inform our client-level Climate Risk assessment, which is part of the Reputational & Sustainability Risk reviews for clients and transactions. We have also set a Risk Appetite for our exposure concentration to clients with a high-temperature alignment combined with low-transition readiness. Temperature alignment is one way to consider a company's impact on climate change and an approach to estimate the emissions profile of our clients. It is calculated based on emission intensities and volume of hydrocarbons produced. It maps the company's forward-looking carbon intensity and hydrocarbon production outlook (where applicable) against a temperature alignment score[7]. Figure 44 shows our clients' weighted average temperature alignment by high-carbon sector and projected at 2030. This covers 1,750 corporate client entities.

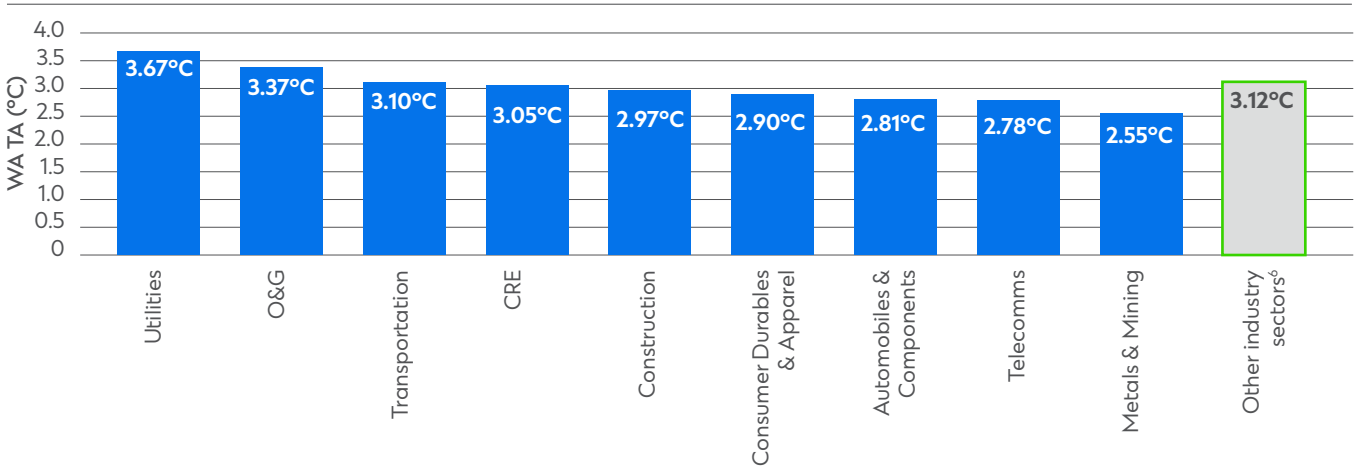
Insights

- Our portfolios by sector are broadly in line with, or below, average sector temperature alignment for most sectors.
- Energy sectors (Utilities and Oil & Gas) have a higher temperature alignment compared to other sectors, given the dependence on high-carbon emitting production, but our portfolio temperature alignment for these sectors is below the sector average.
- Our overall average is 3.10°C, indicating that our portfolio is largely in line with the current global emissions and temperature trajectory.

Caution about the metrics

- Temperature alignment is an emerging concept, and industry-wide standard on the methodology is still evolving. We fully expect our approach to evolve in line with best practice.
- Client-level emissions were only available for about 40 per cent of corporate clients, so sector average proxies were used for the remaining entities.

Figure 44: Weighted average temperature alignment (WATA) by client sectors



6 The weighted average of approximately 20 other sectors to which the Group has the lowest net nominal exposure.
7 For more detail on how temperature alignment is calculated please see page 34 of our 2020 TCFD report.

Country risk

Country-Climate Risk index and bucketing

Standard Chartered has developed a methodology internally that ranks the countries and regions by their physical and Transition Risk, and adaptation readiness. It is used as a factor in the setting of country-risk limits and more detail on the methodology is available from page 55 of 2020 TCFD. We split the rank-ordered data from the country-climate index into 10 buckets, each bucket containing an equal number of countries.

Figure 45: GCR exposure distribution as at December 2021 across the Physical Risk categories

Category	1 (Best)	2	3	4	5	6	7	8	9	10 (Worst)
Exposures %	9.71%	0.70%	25.83%	23.89%	4.13%	23.86%	1.86%	2.40%	5.02%	2.60%

Figure 46: GCR exposure distribution as at December 2021 across the Transition Risk categories

Category	1 (Best)	2	3	4	5	6	7	8	9	10 (Worst)
Exposures %	1.34%	2.10%	0.81%	13.16%	29.42%	34.75%	9.42%	3.72%	4.45%	1.28%

Insights

- For Physical Risk, most of the exposure is located in regions that score in the top half, with about 8 per cent in the two worst rankings.
- For Transition Risk, there is a greater spread but only about 6 per cent in the two worst rankings.
- This indicates that having a diversified spread of exposure across regions gives a level of risk mitigation because physical and Transition Risk are unlikely to be felt evenly across the globe.

Caution about the metrics

- The rankings are informed by external indices. For Physical Risk this is ND-GAIN, a long-standing and robust index but not intended to assess the financial risk of climate change. The index by its own account is highly correlated to GDP per capita which introduces some bias in outcomes.
- The Transition Risk rankings are not forward looking and so do not directly consider the implications of policies and expected emissions movement which can affect the rankings.
- The ranking uses equally spaced decile scores and provides the results in an ordinal manner. It does not inform whether the risk levels in between buckets one and two are similar to bucket nine and 10. While the simplicity helps in adoption and provides the relative position of the countries, other systems might provide more information.

Operational Risk

Standard Chartered's own operations

We analysed more than 1,000 of our operating locations, including branches, offices and data centres to assess the gross Physical Risk profile as shown in[8] Figure 47.

Figure 47: Assessment of gross Physical Risk at our own operating locations

Physical risk event	Time horizon	Scenario	Operating locations at extreme Physical Risk (%)			
			Korea	UAE	Indonesia	Globally
Flood (Acute)	2021	N/A	21%	10%	21%	18%
Wildfire (Acute)			0%	0%	0%	0%
Storm (Acute)			20%	1%	0%	15%
Sea-level rise (Chronic)	2100	RCP 8.5	1%	5%	0%	2%
Number of operating locations			**760**	**216**	**39**	**1015**

Insights

- Outputs from the Munich Re NATHAN tool show that 18 per cent of the Group's locations globally are in locations of extreme flood risk, 15 per cent with extreme storm risk and none at risk from wildfire.
- Longer-term risk (up to 2100) from sea-level rise under RCP 8.5 are minimal being below 5 per cent.
- Not surprisingly, given our footprint, a higher proportion (21 per cent for flood, 20 per cent for storm) of the Group's locations in Asia are subject to extreme physical risks. A total of 21 per cent of locations in Europe and Americas are subject to flood risks, which is driven by the low number of locations in America.
- This is where tropical weather events such as storms or cyclones are not infrequent and the buildings are built with this in mind.

Caution about the metrics

- The metrics are based on outputs from Munich Re's natural catastrophe model and do not assume adaptation measures such as building quality, hazard protection infrastructure (such as flood defences) or government adaptation policies.

8 Results shown in Figure 47 should be read in the context of the methodology in the toolkit section of 2020 TCFD.

Forward-looking statements

This document may contain 'forward-looking statements' that are based on current expectations or beliefs, as well as assumptions about future events. These forward-looking statements can be identified by the fact that they do not relate only to historical or current facts. Forward-looking statements often use words such as 'may', 'could', 'will', 'expect', 'intend', 'estimate', 'anticipate', 'believe', 'plan', 'seek', 'continue' or other words of similar meaning.

The forward-looking statements contained in this document are included to assist our stakeholders in understanding the ways we intend to address climate-related risks and opportunities. This information may not be appropriate for other purposes.

By their very nature, forward-looking statements are subject to known and unknown risks and uncertainties and can be affected by other factors that could cause actual results, and the Group's plans and objectives, to differ materially from those expressed or implied in the forward-looking statements. Recipients should not place reliance on, and are cautioned about relying on, any forward-looking statements. There are several factors which could cause actual results to differ materially from those expressed or implied in forward-looking statements. The factors that could cause actual results to differ materially from those described in the forward-looking statements include (but are not limited to): changes in global, political, economic, business, competitive and market forces or conditions; future exchange and interest rates; changes in environmental, social or physical risks; legislative, regulatory and policy developments, including regulatory measures addressing climate change; the development of standards and interpretations, including evolving practices in Environmental, Social and Governance reporting; the ability of the Group to mitigate the impacts of climate change effectively; risks arising out of health crises and pandemics; changes in tax rates, future business combinations or dispositions; and other factors specific to the Group. Any forward-looking statement contained in this document is based on past or current trends and/or activities of the Group and should not be taken as a representation that such trends or activities will continue in the future.

No statement in this document is intended to be a profit forecast or to imply that the earnings of the Group for the current year or future years will necessarily match or exceed the historical or published earnings of the Group. Each forward-looking statement speaks only as of the date of the particular statement. Except as required by any applicable laws or regulations, the Group expressly disclaims any obligation to revise or update any forward-looking statement contained within this document, regardless of whether those statements are affected as a result of new information, future events or otherwise.

Please refer to the Group's latest Annual Report for a discussion of certain of the risks and factors that could cause actual results, and the Group's plans and objectives, to differ materially from those expressed or implied in the forward-looking statements.

Important Notice – Basis of Preparation and Caution Regarding Data Limitations

Standard Chartered PLC is incorporated in England and Wales with limited liability, and is headquartered in London. The Group's head office provides guidance on governance and regulatory standards. Standard Chartered PLC. Stock codes are: LSE STAN.LN and HKSE 02888.

The reader should be aware that this document and the information contained within it, has been prepared on the following basis:

i. this document and its contents are unaudited;

ii. all material contained in this document is subject to change without notice;

iii. the material in this document does not constitute any investment, accounting, legal, regulatory or tax advice or an invitation or recommendation to enter into any transaction;

iv. this document has been prepared using models, methodologies and data which are subject to certain limitations. These limitations include: a lack of reliable data (due, amongst other things, to developing measurement technologies and analytical methodologies); a lack of standardisation of data (given, amongst other things, the lack of international coordination on data and methodology standards); and future uncertainty (due, amongst other things, to changing projections relating to technological development and global and regional laws, regulations and policies, and the inability to make use of strong historical data);

v. some of the models, external data and methodologies used in this document are subject to adjustment which is beyond our control;

vi. any opinions and estimates should be regarded as indicative, preliminary and for illustrative purposes only. Expected and actual outcomes may differ from those set out in the document (as explained in the "Forward-looking statements" section);

vii. some of the information appearing in this document may have been obtained from public and other sources and, while the Group believes such information to be reliable, it has not been independently verified by the Group and no representation or warranty is made by the Group as to its quality, completeness, accuracy, fitness for a particular purpose or non-infringement of such information;

viii. for the purposes of this document, a number of key judgements and assumptions have been made. It is possible that the assumptions drawn, and the judgement exercised may subsequently turn out to be inaccurate. The judgements and data presented in this document are not a substitute for judgements and analysis made independently by the reader;

ix. any opinions or views of third parties expressed in this document are those of the third parties identified, and not of the Group, its affiliates, directors, officers, employees or agents. By incorporating or referring to opinions and views of third parties, the Group is not, in any way, endorsing or supporting such opinions or views;

x. the data contained in this document reflects best estimates at the relevant time;

xi. where the Group has used the methodology and tools developed by a third party, the application of the methodology (or consequences of its application) shall not be interpreted as conflicting with any legal or contractual obligations and such legal or contractual obligations shall take precedence over the application of the methodology;

xii. where the Group has used underlying data provided or sourced by a third party, the use of the data shall not be interpreted as conflicting with any legal or contractual obligations and such legal or contractual obligations shall take precedence over the use of the data;

xiii. this Important Notice is not limited in applicability to those sections of the document where limitations to data, metrics and methodologies are identified and where this Important Notice is referenced. This Important Notice applies to the whole document;

xiv. further development of reporting or other standards could impact the metrics, data and targets contained in this document (it being noted that Environmental, Social and Governance reporting and standards are subject to rapid change and development); and

xv. while all reasonable care has been taken in preparing this document, neither the Group nor any of its affiliates, directors, officers, employees or agents make any representation or warranty as to its quality, accuracy or completeness, and they accept no responsibility or liability for the contents of this material, including any errors of fact, omission or opinion expressed.

You are advised to exercise your own independent judgement (with the advice of your professional advisers as necessary) with respect to the risks and consequences of any matter contained in this document. The Group, its affiliates, directors, officers, employees or agents expressly disclaim any liability and responsibility for any decisions or actions which you may take and for any damage or losses you may suffer from your use of or reliance on this material.

Copyright in all materials, text, articles and information contained herein (other than third party materials, text, articles and information) is the property of, and may only be reproduced with permission of an authorised signatory of, the Group. Copyright in materials, text, articles and information created by third parties and the rights under copyright of such parties are hereby acknowledged. Copyright in all other materials not belonging to third parties and copyright in these materials as a compilation vests and shall remain at all times copyright of the Group and should not be reproduced or used except for business purposes on behalf of the Group or save with the express prior written consent of an authorised signatory of the Group. All rights reserved.

Approvals to be approved

This report was approved by:

Mark Smith
Group Chief Risk Officer

Claire Dixon
Group Head, Corporate Affairs
Brand and Marketing

Appendix 1

Platforms, initiatives and working groups in which we participate

Platform	Objectives and progress
Sustainable Markets Initiative Financial Services Task Force (FSTF)	In 2021, along with peer FSTF banks, we contributed to the publication of the Net Zero Practitioner's Guide, aimed at helping the banking industry to support clients' net zero transition strategies. We were also an active participant in FSTF's work on carbon markets.
Net-Zero Banking Alliance (NZBA)	In 2021, we were appointed Chair of the NZBA, a UN-convened and bank-led platform that looks to develop standards for bank commitments to net zero. We supported the creation of NZBA's overarching governance and the creation of three workstreams, on implementation, sectors and outreach and recruitment. We are an active participant in each of these.
B20	In 2021, our Group CEO co-chaired the B20 Taskforce for Finance and Infrastructure under the Indonesia's presidency of the G20. This is the third consecutive year our Group CEO has had a leadership role in the B20 process. This year, the taskforce will help us ensure that our views on blended finance and carbon markets are reflected in the business community's recommendations to the G20.
Glasgow Financial Alliance for Net Zero (GFANZ)	As Chair of the Net Zero Banking Alliance, we are also a Steering Committee member of GFANZ. During 2021, we participated in a number of GFANZ workstreams, including on mobilising capital and policy.
Rocky Mountain Institute: Centre for Climate Aligned Finance	We are one of six global banks participating in the Climate-aligned Finance Working Group for decarbonising the steel sector.
Science Based Targets Initiative (SBTi): Financial Institutions Expert Advisory Group	We participate in SBTi's advisory group, and in 2021 provided input to their consultation on Net Zero Foundations for Financial Institutions.
Integrity Council for the Voluntary Carbon Markets (IC-VCM)	Our Group CEO is a member of the Distinguished Advisory Group for the IC-VCM. The Integrity Council is a global governance body to establish and maintain global standards for voluntary carbon credits. The IC-VCM was created by the Taskforce for Scaling Voluntary Markets, which our Group CEO chaired.
Coalition for Climate Resilient Investment (CCRI)	In 2021, we participated in CCRI's Summit, attended by business and governmental leaders from around the world.
PRA and FCA's joint Climate Financial Risk Forum (CFRF): Risk Management Working Group	The CFRF, co-chaired by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA), builds capacity and shares best practice across financial regulators and industry, to advance our sector's responses to the financial risks from climate change. In 2021, we contributed to the production of the Disclosure and Scenario Analysis industry guides to climate-related financial risk management.
United Nations Environment Programme for Financial Institutions (UNEP-FI): Climate Resilience Risks and Opportunities Coalition	We are a working member of this leadership group to promote exposure of Physical Risks and opportunities across the financial sector. In 2021, we provided input to the 2021 report on Liability Risk and adaptation finance.
World Economic Forum's CEO Climate Leaders Alliance	Our Group CEO is a member of the Alliance, and in 2021 we contributed to the Alliance publication 'Winning the Race to Net Zero'.
United Nations' Global Investors for Sustainable Development (GISD) Alliance	In 2021, our Group Chairman, was appointed Co-Chair of the United Nations' GISD Alliance. The GISD seeks to align private finance with the UN Sustainable Development Goals and to implement solutions for scaling up long-term investment for sustainable development.
World Economic Forum (WEF)	We are a partner bank in the WEF Transition Finance Working Group.

Appendix 2

Sustainable finance bond allocation (July 2020 – July 2021)

Sustainable bond transactions use the bond market to direct fund flows towards sustainable projects. Our Framework is aligned with the ICMA Green Bond Principles (2018), Social Bond Principles (2020) and the Sustainability Bond Guidelines (2018).

Read our Sustainability Bond Framework

Figure 48: Sustainable finance bond allocation

Eligible portfolio			Green and sustainable funding				
	Number of loans	Amount ($)	Instrument (ISIN)	Issuance date	Due date	Principal	Amount ($)
Green Assets	**118**	**5,490,009,465.86**	XS2021467753	Jul-19		EUR 500m	584,220,000
			US853254CB42	Mar-21		$500m	500,000,000
Renewable Energy	55	1,513,092,858.40					
Grid Expansion	1	104,285,213.74					
Hybrid Energy Sources	3	174,432,760.64					
Hydropower	1	19,847,966.25					
Manufacturing	12	480,793,536.20					
Solar	21	268,560,153.01					
Waste to Energy	3	50,957,741.41					
Wind	14	414,215,487.13					
Sustainable Water and Wastewater Management	**2**	**12,997,137.16**					
Clean Transport	**4**	**527,610,495.12**					
Green Buildings	**57**	**3,436,308,975.18**					
Social Assets		**3,556,423,241.12**					
Access to Water	**1**	**32,183,499.22**					
Employment Generation	**904,940**	**3,083,117,835.38**					
Microfinance	885,340	465,063,783.65					
SME lending	19,600	2,618,054,052.30					
Healthcare Infrastructure	**5**	**139,551,216.45**					
Roads Infrastructure	**3**	**104,677,655.15**					
COVID-19	**26**	**196,893,034.35**					
Fund Finance	**3**	**165,022,409.59**					
Total Sustainability Assets		**9,211,455,116.57**					**1,084,220,000**

- Percentage of Eligible Sustainable Loan Portfolio Allocated to Sustainability Bond (usage): 12%
- Percentage of Net Proceeds of Sustainable Funding allocated to Eligible Portfolio: 100%
- Eligible Portfolio – Unallocated to Sustainability Bond: $8,127,235,116
- New Loans in the Green Portfolio since 2 July 2020: 94 new loans, ($4,865m increase from 2020)
- New Loans in the Social Portfolio since 2 July 2020: 460,567 loans enabled ($318m increase from 2020)[9]
- New Loans in Sustainable Portfolio Since 2 July 2020: 3 new loans ($165m increase from 2020)
- EUR:$ exchange rate as of 13 Aug 2020; EUR 1 = $1.1684

9 This year the number of loans in our microfinance portfolio fell although we saw the average size of each loan increase, likely as a result of the pandemic conditions in our footprint markets.

Figure 49: Total sustainable bond portfolio breakdown (July 2020 – July 2021)

Total portfolio $9.21bn		
Green	$5,490,009,265.86	
Social	$3,556,423,241.12	
Sustainable	$165,022,409.59	
Total	**$9,211,455,116**	
Emerging, frontier and least, lower and lower middle-income OECD DAC countries	$6,452,596,422.98	70%
Rest of world	$2,758,858,693.58	30%
Total	**$9,211,455,116**	
Asia, Africa, and the Middle East	$7,760,442,289.64	84%
Rest of the world	$1,451,012,827	16%
Total	**$9,211,455,116**	

Green assets

Our green projects helped us to avoid 1.39 million tonnes of CO_2 emissions in the past year. This is equivalent to removing over 300,000 commercial cars from the road, or over 3 million passenger economy class seats from London to Singapore.

To do this we have financed over $1.5 billion of renewable energy projects, $500 million of clean transport projects, and supported a significant expansion of green buildings through $3.4 billion of financing to projects with eligible green building certifications.

This is in line with the challenge we set ourselves, and the wider private sector, in our Opportunity 2030 report where we identified a $10 trillion gap in financing for the Sustainable Development Goals.

See page four of our Sustainable Finance Impact Report for more information for more information on the impact of our green assets.

Figure 50: Green project financing (July 2020 – July 2021)

Green project financing: $5,490m					
Category	**Type of project**	**Market**	**Number of projects**	**Bond asset portfolio amount**	**GHG emissions avoided (tCO_2E)**
Renewable Energy	Grid	Angola	1	104	702.05
	Hybrid	Singapore	1	40	–
		India	1	121	27,455.81
	Manufacturing	China	5	185	225,778.97
		Germany	1	117	118.70
		India	1	11	8,294.71
		Malaysia	3	48	628.15
		USA	2	120	134.33
	Solar	Bangladesh	1	14	20,561.39
		China	1	15	17,267.44
		India	4	25	21,356.40
		Jordan	1	10	7,847.42
		Malaysia	5	11	2,485.52
		Vietnam	2	35	16,571.10
		China	1	25	33,431.93
		Australia	1	44	109,700.23
		India	1	47	113,009.55
		Taiwan	1	55	15,314.74
		United Kingdom	2	57	42,962.84
Green Buildings	CRE	America	4	248	1,159.83
		Australia	1	16	21.58
		China	4	118	489.48
		France	2	71	33.14
		Germany	1	36	160.21
		Hong Kong	2	156	182.76
		India	5	346	5,317.99
		Korea	1	330	1,103.53
		Singapore	6	612	729.40
		UAE	2	134	484.94
		United Kingdom	11	412	280.31
Total			**74**	**3,563**	**673,584.45**

Category	Type of project	Market	Project description	Bond asset portfolio amount	Impact indicator[10]
Clean Transportation	Rail	Australia	Construction of 10.2 kilometre rail link.	56	Reduces private vehicle kilometres travelled by 526,000km per day by 2036, considerably reducing greenhouse gas emissions (carbon dioxide) compared to 'without' the CRR Project. Reduces the number of private vehicles entering the CBD in the morning peak by 1,300
		Tanzania	The proceeds from the financing will be used for financing Lot 1 and Lot 2 (approx. 550 kms) of the Standard Gauge Railway (SGR) connecting Dar-EsSalaam to Makutupora located in Tanzania	60	535km length of railway tracks built
		Cameroon	The procurement of nine passenger locomotives by the Government of Cameroon 402 from General Electric (GE) for the deployment on the national transport grid to support the movement of people	10	Nine passenger locomotives financed
		UAE	Financing for construction of new Dubai Metro line. The project is fully electrified and runs off power generated on the Dubai grid	402	15 km length of rail built Seven train stations 16,000 passenger capacity per hour per direction Upgrades to existing metro network
Total				**528**	

Figure 51: A detailed breakdown of our green construction assets (July 2020 – July 2021) by type and location

Category	Type of project	Market	Number of projects	Bond asset portfolio amount	GHG emissions avoided (tCO_2E)
Renewable Energy	Hybrid	India	1	13	58,660.21
	Hydropower	Cameroon	1	20	10,535.06
	Solar	India	4	74	170,491.48
		Oman	1	25	51,223.98
		UAE	2	59	38,627.21
	Waste To Energy	UAE	1	7	3,533.11
		Vietnam	1	19	21,476.83
	Wind	France	2	17	1,261.24
		India	1	31	110,799.06
		Jordan	1	24	22,355.11
		Taiwan	3	124	45,316.29
		UK	2	15	7,211.64
Green Buildings	CRE	Australia	1	24	33.13
		Hong Kong	3	396	464.82
		Korea	11	441	1,203.15
		Malaysia	1	57	117.86
		Singapore	2	39	38.36
Total			**38**	**1386**	**543,348.52**

10 https://www.icao.int/environmental-protection/Carbonoffset/Pages/default.aspx https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle

Figure 52: A detailed breakdown of our green operational and construction assets (July 2020 – July 2021) by type and location

Market	Asset hold $m	Project count	% Breakdown
Africa	4	1	0.08%
Angola	104	1	1.90%
Australia	140	4	2.54%
Bangladesh	14	1	0.25%
Cameroon	30	2	0.55%
China	343	11	6.24%
France	88	4	1.60%
Germany	153	2	2.79%
Hong Kong	552	5	10.06%
India	669	18	12.18%
Jordan	34	2	0.61%
Malaysia	125	10	2.28%
Oman	25	1	0.45%
Singapore	690	9	12.57%
South Korea	772	12	14.06%
Taiwan	179	4	3.26%
Tanzania	60	1	1.08%
UAE	602	6	10.97%
United Kingdom	484	15	8.82%
United States	368	6	6.71%
Vietnam	55	3	0.99%
Grand total	**5,490**	**118**	**100.00%**

See page 25 of our Sustainable Finance Impact Report for more details on our methodology.