

HSBC Green Bonds Report



Introduction

“Achieving net zero means we need to see a fundamental reshaping of industries and therefore of the global economy. Getting there requires bold action, new partnerships and ways of engaging with customers and stakeholders to accelerate the new solutions the world requires. As one of the world’s largest banks, HSBC has a vital role to play in financing the transition to support businesses and economies to thrive in a net zero future, and an ambitious plan to make this happen.” Celine Herweijer, Group Chief Sustainability Officer, HSBC

After the immediate threat posed to the global community by the Covid-19 pandemic temporarily halted efforts to tackle the climate crisis, it soon became apparent that the two issues are interconnected - and so too must be their solutions. The scientific community continues to stress that climate action needs to be at the heart of governments’ economic recovery models. The global health crisis has sharpened the focus on the impact climate change can have on our society. In the wake of the pandemic, countries can build back stronger and create long-lasting transformation by harnessing investment into more sustainable, planet-friendly growth.ⁱ

With the rise in global temperatures in recent decades, the importance of international cooperation to address the climate emergency has been brought into focus. The 2015 Paris Agreement set forth a legally binding commitment bringing countries together in a shared mission to combat global warming by reducing greenhouse gas emissions and transitioning to climate-resilient development.ⁱⁱ The G7 summit in June 2021 pledged to mobilise up to \$10bn to support renewable energy deployment in emerging economiesⁱⁱⁱ and at the 26th UN Climate Change Conference of the Parties (COP26) former Bank of England Governor Mark Carney set out details of a coalition of international financial companies known as The Glasgow Financial Alliance for Net Zero (Gfanz) with the aim of delivering as much as \$100tn of financing to help economies transition to net zero over the next three decades.^{iv} HSBC is proud to be part of Gfanz and is joining 42 banks from 23 countries to unlock the banking sector’s potential to accelerate the global transition to net zero.^v

Fulfilling the commitment to building a greener future requires joint efforts from the public and private finance sectors to scale up sustainable investment globally. According to a report published by the Climate Policy (CPI) Initiative, green assets have proven more resilient than conventional ones to the disruption caused by the pandemic, which has led to growing investor confidence in climate finance. However, the CPI report also shows that despite some promising trends of growth, annual investment into sectors like the renewable energy industry would need to almost triple from USD300bn to USD800bn to be able to meet the carbon-neutrality objective by mid-century.^{vi}

2021 marks seven years of HSBC’s membership to the International Capital Market Association’s (ICMA) Executive Committee for the Green Bond Principles. Integral to our climate ambition is helping to finance the transition to net zero by applying a sustainability lens to our financing decisions. This is reflected in our pledge to provide and facilitate \$750bn to \$1tn of sustainable finances and investments by the end of 2030.^{vii}

Green Bond Market Overview

While the pandemic brought a temporary lull in green financing activity in the first half of 2020, green bonds issuance has swiftly rebounded to reach a record-breaking \$290.1bn by the end of 2020, compared to \$266.8bn in 2019. Building on this, 2021 is set to be a record year, Climate Bonds Initiative has lifted its January forecast of \$400-450bn in annual green bond investment to the Half Trillion mark for 2021, reflecting the strength of the green market in the first 6 months of the year. Their predictions bring into sight the milestone of \$1tn in annual green investment in 2023.^{viii}

In 2021, as battling climate change is yet again a central issue on the public agenda, the green finance sector continues to gain ground rapidly. More ESG-related bonds having been issued in the first six months of the year than in all of 2020 (\$450bn), and the overall growth has been so impressive that forecasts for green and social bond issuance have been revised from \$750bn to \$900bn. In addition, green, social or sustainable bonds accounted for almost a fifth of all bonds issued in June 2021.^{ix}

In July 2021, the European Commission introduced a proposal for a new EU Green Bond Standard (EUGBS), providing an updated framework for governments and corporations to drive investment into environmentally friendly initiatives and projects. The launch of the framework forms part of the effort to increase regulation and combat ‘greenwashing’ practices in the market. As investor appetite for green financial products and services continues to grow, measures like the EU Green Bond Standard are key in helping to preserve market integrity and ensure that financing is only allocated to projects that meet detailed sustainability criteria.^x

The green bond market is diversified in terms of the structure, allowing greater scope for financing climate solutions. Product developments include access to debt capital markets through structured bonds, those that link the return of the bond to an underlying investment.

Given the recent developments within the green bond market place and the evolving landscape, including the developing green taxonomies, we are undertaking a refresh of our existing frameworks to reflect the latest standards, taxonomies and best practices. This will include enhancements to reporting and governance as we recognise the heightened interest and higher expectations from the evolving standards. The new framework and enhancements are expected to be progressed in 2022 and will be subject to continuing review and monitoring to ensure that they remain up to date and reflect updated standards, taxonomies and

best practices. Any such developments in standards, taxonomies and best practices over time could result in revisions in our reporting going forward and lead to differences year-on-year as compared to prior years.

Structured Green Bond Market Overview

Packaging debt into different structures offers investors better options to align their green preferences and investments to their long-term objectives. Structured green bonds can be either a public or a private placement, enabling the needs of investors to be met. Such innovation reveals the evolving nature of the market to meet existing investor demand whilst also increases the prospect of future growth.

Market Opportunity

HSBC's commitment to green finance has continued into 2021, through both our own product creation and working with clients to structure financing for sustainable projects.

As an important step toward fulfilling this ambition, we are aiming to create the world's largest dedicated natural capital asset management company through a partnership between HSBC Global Asset Management and Pollination. The joint venture will establish a series of 'natural capital' funds, investing in a wide range of projects that safeguard and enhance nature in the long-run and address the climate crisis.^{xi} HSBC has continued to broaden the horizons of climate finance, by supporting Egypt in launching the first sovereign green bond in the Middle East and North Africa worth \$750mn at the end of end of 2020.^{xii} In addition, the UK government selected HSBC to jointly structure its first ever sovereign green bond. The landmark issuance will raise funds for projects targeting climate change, investment in green infrastructure and creating green jobs across the UK as part of the government's strategy to achieve net zero carbon emissions by 2050.

HSBC's position in the industry has been recognised through several notable awards and industry rankings. HSBC were named as 'Best Bank for Sustainable Finance' for both Asia and the Middle East at Euromoney's 2021 regional awards.^{xiii} In addition, HSBC won no less than seven categories at the Environmental Finance Bond Awards in 2021, including 'Lead Manager of the Year, Green Bonds', with the bank being lauded as a key player in the development of the green, social and sustainability bond market.^{xiv}

HSBC Green Bond Report

This Report covers HSBC's Green Bond range, detailing the framework, evaluation and selection procedure, reporting criteria and use of proceeds of:

- ◆ Equity Linked Green Bond – FR0013224334 (issued 27 March 2017)
- ◆ Green Structured Bond – FR0013294352 (issued 20 November 2017)
- ◆ Green Structured Bond – FR0013298189 (issued 5 December 2017)
- ◆ Green Structured Bond – FR0013336013 (issued 1 May 2018)
- ◆ Green Bond – XS1917601582 (issued 27 November 2018)
- ◆ Equity Linked Green Bond – FR0013432846 (issued 29 July 2019)
- ◆ Equity Linked Green Bond – FR0013432861 (issued 29 July 2019)
- ◆ Equity Linked Green Bond – FR0013440864 (issued 13 August 2019)
- ◆ Equity Linked Green Bond – XS2034898978 (issued 6 August 2019)
- ◆ Equity Linked Green Bond – FR0013445210 (issued 31 January 2020)
- ◆ Green Bond – TW000G133227 (issued 25 December 2020)
- ◆ Green Structured Bond – FR0013483161 (issued 18 February 2020)
- ◆ Green Certificate of Deposit – XS2334443160 (issued 16 April 2021)

For further details on the projects funded, please visit: <https://www.hsbc.com/investors/fixed-incomeinvestors/green-and-sustainability-bonds>

HSBC Holdings plc is responsible for the preparation of this report and all supporting records, including selecting appropriate reporting criteria to form the Green Bond Framework and assessing the statement as to Use of Proceeds against that Framework. On behalf of each HSBC group bond issuer, the allocation and tracking of funds received is the responsibility of our Green Bond & Loan Committee as described on page 4 in this report. We confirm that the statement as to Use of Proceeds is properly prepared in accordance with the Framework for the year ended 30 June 2021.

HSBC Green Bond Framework Summary

The full green bond framework that aligns to the June 2018 ICMA Green Bond Principles can be found at: <https://www.hsbc.com/investors/fixed-income-investors/green-and-sustainability-bonds>

Pillar

 <p>Use of proceeds</p>	<ul style="list-style-type: none"> Renewable energy Energy efficiency Sustainable waste management Sustainable land use Efficient buildings Clean transportation Sustainable water management Climate change adaptation
 <p>Evaluation</p>	<ul style="list-style-type: none"> Agreed criteria for selecting Use of Proceeds and confirming eligibility Local Banker proposes the Use of Proceeds HSBC Group Sustainability review for ESG factors and compliance with Green Bond Framework Green Bond & Loan Committee (GB&LC) confirms eligibility
 <p>Funds tracking</p>	<ul style="list-style-type: none"> Use of Proceeds tracked via HSBC’s Green Asset Register published alongside this report The asset register is reviewed regularly by the GB&LC New assets to the register are sourced from facilities included within our \$750bn-\$1tn Sustainable Finance & Investment commitment
 <p>Reporting</p>	<ul style="list-style-type: none"> HSBC Holdings plc will provide a consolidated Green Progress Report covering all issuances annually until full allocation. Thereafter, HSBC Holdings plc will provide a Green Progress Report if there have been material updates made to the project allocation The GB&LC review and approve each Green Progress Report, which includes: <ul style="list-style-type: none"> Aggregate amounts of funds allocated to each of the Eligible Sectors, followed by more detailed descriptions of the types of business and projects financed The remaining balance of unallocated Green Bond proceeds at the reporting period end Confirmation that the Use of Proceeds of the Green Bond(s) issued conform to the HSBC Green Bond Framework

Assurance Obtained

A second party opinion from CICERO on the HSBC Green Bond Framework and been certified as ‘Dark Green’.

The full opinion, dated Nov 2015, can be found at: <https://www.hsbc.com/investors/fixed-income-investors/green-and-sustainability-bonds>

Summary

Overall, HSBC’s Green Bond framework and environmental policies provide a progressive framework for climate-friendly investments. The Green Bond framework lists eligible businesses and projects that are mainly supportive of the objective of promoting a transition to low-carbon and climate-resilient growth and is supported by a strong governance structure.



HSBC has engaged PwC as an independent assurance provider to provide limited assurance that selected information denoted by (A) in this report has been prepared in line with the HSBC Green Bond Framework. Details of the assurance process are included in a file on our website^{xv}.

Excluded Use of Proceeds

As stated in our framework:



Nuclear power



Weapons



Gambling



Alcohol

Furthermore, no coal or Palm Oil related assets are, or will be, financed under this Green Bond Framework.

Reporting Evaluation and Selection Procedure

The cornerstone of every Green Bond is the verifiable use of its proceeds to support sustainable investment. To facilitate this, issuers need a robust and transparent framework detailing, among other aspects, a strong project evaluation and selection process.

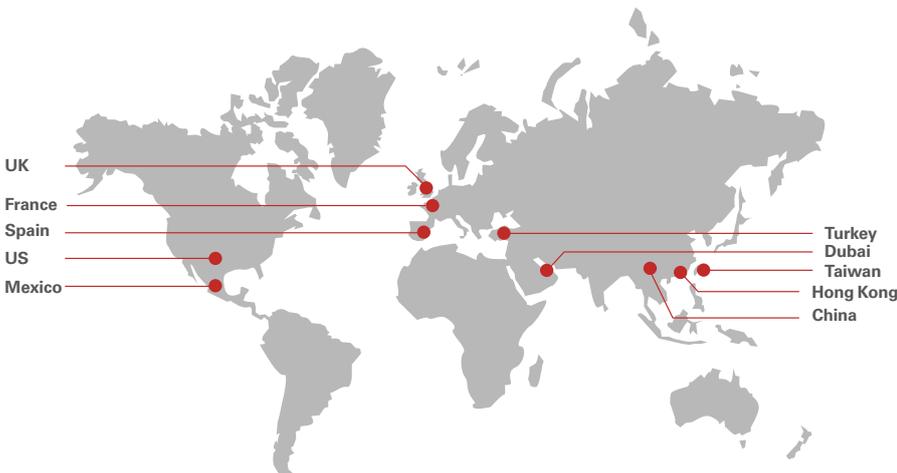
HSBC's Green Bond Framework is overseen and governed by the Green Bond & Loan Committee (GB&LC). The GB&LC is chaired by HSBC Group Treasury and consists of sustainability specialists and senior management from across the businesses, including input from Sustainable Finance teams.

The GB&LC has responsibility for the ratification of sustainable projects to be allocated to green issuances. Once a local banker identifies a transaction as green they follow the guidelines, as summarised below:

- ◆ A definition of green finance/lending has been developed and approved for HSBC's Sustainable Finance and Investments. The data dictionary detailing the definitions, including industry standards that a facility must align to in order to be green, is published in HSBC's ESG Reporting Centre;^{xvi}
- ◆ Once a green project is identified by the local banker as green, based on the data dictionary definition, an approval is sought from their local sustainable finance forum who will approve if the facility aligns to the definition and relevant standards required to be deemed green. The sustainable finance forum includes representatives from; global businesses, corporate sustainability, reputational risk, lending & transaction management and risk. Only approved facilities are included within the sustainable finance commitment and are then consider as a potential asset to support a green issuance; and
- ◆ Once identified as a green asset to support a green issuance, the sustainable finance form approval, along with supporting documentation is provided to the GB&LC to assess and ensure the facility aligns to all sections of the HSBC Green Bond Framework. If the facility is ratified by the committee as aligning to the Green Bond Framework the asset is added to the asset register and allocated to an issuance.

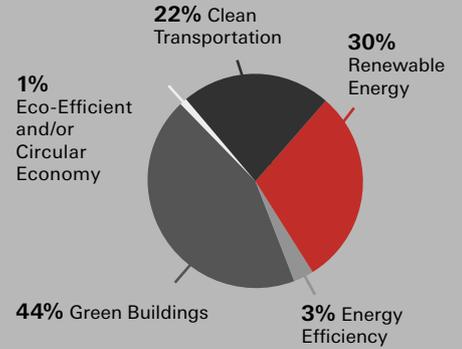
Regional Bond Allocation

Projects are located in



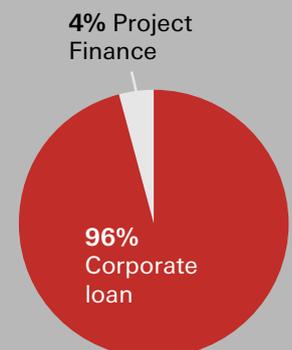
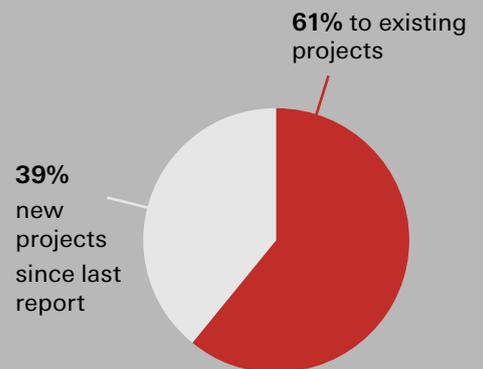
Key Stats:

Amount Disbursed to Eligible Green Projects or Businesses



*<1% is allocated to Sustainable Waste Management not visible in pie chart.

Bond Allocation



(All figures correct as of 30 June 2021)

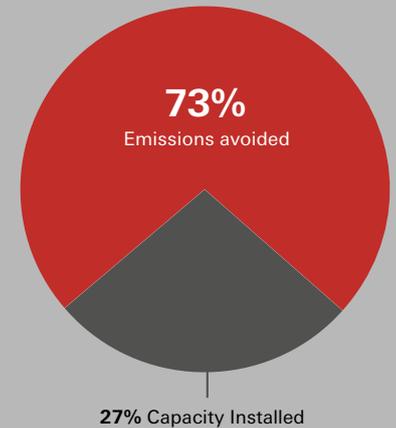
Reporting Criteria For Green Bonds

A summary of the selection process for these projects is noted below:

- ◆ HSBC finance/lending identified as green by the local banker – noting whether the Use of Proceeds conform to HSBC Green Bond Framework
- ◆ Projects within the region of the issuing entity, are considered for potential inclusion. Where HSBC Holdings plc is the issuer assets from all locations can be considered.
- ◆ The HSBC Green Asset Register tracks all projects identified by Relationship Managers within the region of the issuing entity and records the review/approval process performed by Group Sustainability and the GB&LC as noted above
- ◆ All projects in the HSBC Green Asset Register are 'ratified' for inclusion in the Green Bond by the GB&LC
- ◆ If ratified by the GB&LC, the projects outstanding commitments as per HSBC's financial reporting systems at 30 June 2021 (elected reporting date) are recorded within the HSBC Green Asset Register
- ◆ Exchange rates are taken from HSBC internal conversion rates where project investments are made in alternative currencies
- ◆ For the purpose of this report new projects are those which were agreed and signed within six month from the issuance of the bond they are allocated to. All other projects are considered to be "existing" projects
- ◆ There is no direct financial link between the allocated assets and the green bond itself, i.e. this is an unsecured issuance

Key Stats:

Amount distributed by type of project*



(All figures correct as of 30 June 2021)



HSBC Green Progress Report

Green Bond and Certificate of Deposit details

Reporting Date 30/06/2021

Reference	HSBC-GRB-002	HSBC-GRB-003	HSBC-GRB-004	HSBC-GRB-005	HSBC-GRB-006	HSBC-GCD-010
Type	Equity Linked Green Bond	Green Structured Bond	Green Structured Bond	Green Structured Bond	Green Bond	Green Certificate of Deposit
Issuer	HSBC Continental Europe	HSBC Continental Europe	HSBC Continental Europe	HSBC Continental Europe	HSBC Holdings plc	Hongkong and Shanghai Banking Corporation Limited
Issue Date	27 March 2017	20 November 2017	05 December 2017	01 May 2018	27 November 2018	16 April 2021
Currency	EUR	EUR	EUR	EUR	EUR	CNY
Tenor	8 years	15 years	15 years	15 years	6 years	<1 year
Issued amount	38m	40m	50m	100m	1,250m	251.94m
ISIN	FR0013224334	FR0013294352	FR0013298189	FR0013336013	XS1917601582	XS2334443160

Use of Proceeds (numbers rounded to the nearest m)

Reporting Date 30/06/2021

Reference	HSBC-GRB-002	HSBC-GRB-003	HSBC-GRB-004	HSBC-GRB-005	HSBC-GRB-006	HSBC-GCD-010						
Type	Equity Linked Green Bond	Green Structured Bond	Green Structured Bond	Green Structured Bond	Green Bond	Green Certificate of Deposit						
Renewable Energy	1	3%	-	-	46	92%	24	24%	343	26%	-	-
Eco-Efficient and/or Circular Economy	-	-	-	-	-	-	16	16%	-	-	-	-
Energy Efficiency	-	-	43	100%	-	-	-	-	-	-	-	-
Efficient (Green) Buildings	37	97%	-	-	1	2%	60	60%	577	44%	405	100%
Sustainable Waste Management	-	-	-	-	3	6%	-	-	-	-	-	-
Clean Transportation	-	-	-	-	-	-	-	-	383	30%	-	-
(A) Total:	38	43	50	100	1,303	405						

Further Bond Information

Reporting Date 30/06/2021

Number of projects/clients supported	4	1	3	6	8	1
Geographic allocation of projects	UK	UK	UK Turkey	UK Turkey France	USA Hong Kong Mexico Middle East Spain China	Hong Kong

All projects are listed in the full green asset register that can be found at - <https://www.hsbc.com/investors/fixed-income-investors/green-and-sustainability-bonds>. To ensure full asset coverage of the bond, the total outstanding balances of the assets allocated maybe in excess of the bond total value.

The HSBC Green Bond Register forms the basis of the data in the table below:

For full breakdown of asset allocation, details can be found at <https://www.hsbc.com/investors/fixed-income-investors/green-and-sustainability-bonds>

HSBC Green Progress Report

Green Bond details (2)

Reporting Date 30/06/2021

Reference	HSBC-GRB-007	HSBC-GRB-008	HSBC-GRB-009	HSBC-GRB-010	HSBC-GRB-012	HSBC-GRB-015	HSBC-GRB-016
Type	Equity Linked Green Bond	Green Bond	Green Structured Bond				
Issuer	HSBC Continental Europe	HSBC Continental Europe	HSBC Continental Europe	HSBC Bank plc	HSBC Continental Europe	HSBC Bank (Taiwan) Limited	HSBC Continental Europe
Issue Date	29 July 2019	29 July 2019	13 August 2019	06 August 2019	31 January 2020	25 December 2020	18 February 2020
Currency	USD	USD	USD	USD	EUR	TWD	EUR
Tenor	6 years	4 years	4 years	3 years	10 years	5 years	12 years
Issued amount	1m	0.7m	2.1m	1m	48m	3,000m	20m
ISIN	FR0013432846	FR0013432861	FR0013440864	XS2034898978	FR0013445210	TW000G133227	FR0013483161

Use of Proceeds (numbers rounded to the nearest m)

Reporting Date 30/06/2021

Reference	HSBC-GRB-007	HSBC-GRB-008	HSBC-GRB-009	HSBC-GRB-010	HSBC-GRB-012	HSBC-GRB-015	HSBC-GRB-016					
Type	Green Structured Bond	Green Structured Bond	Green Structured Bond	Green Structured Bond	Equity Linked Green Bond	Green Bond	Green Structured Bond					
	USD	USD	USD	USD	EUR	TWD	EUR					
Renewable Energy	-	-	-	-	48	100%	1,595	100%	-	-		
Eco-Efficient and/or Circular Economy	-	-	-	-	-	-	-	-	-	-		
Energy Efficiency	-	-	1	100%	-	-	-	-	-	-		
Efficient (Green) Buildings	1	100%	-	-	2	100%	1	100%	-	-	20	100%
Sustainable Waste Management	-	-	-	-	-	-	-	-	-	-	-	-
Clean Transportation	-	-	-	-	-	-	-	-	-	-	-	-
(A) Total:	1	1	2	1	48	1,595	20					

Further Bond Information

Reporting Date 30/06/2021

Number of projects/clients supported	1	1	1	1	1	2	1
Geographic allocation of projects	UK	UK	UK	UK	UK	Taiwan	UK

HSBC Sustainable Financing Updates

HSBC has created various platforms to facilitate communication of its Sustainable Financing activities. These are listed below, along with other reports we have supported:

- ◆ HSBC Green Bonds Website:
<http://www.hsbc.com/investor-relations/fixed-income-securities/green-bond-reports>

- ◆ HSBC Environmental, Social & Governance Update April 2020:
<https://www.hsbc.com/our-approach/measuring-our-impact>

- ◆ HSBC Centre of Sustainable Finance:
<http://www.sustainablefinance.hsbc.com/>

- ◆ Sustainable Financing Website:
<http://www.gbm.hsbc.com/solutions/sustainable-financing>

- ◆ CBI Global State of the Market report 2020:
www.climatebonds.net/resources/reports/sustainable-debt-global-state-market-2020

- ◆ China Green Bond Report 2020:
<https://www.climatebonds.net/resources/reports/china-state-market-2020-report>

For further information on Sustainable Finance at HSBC please use the above websites. Additional disclosure in line with our TCFD commitments will be found in the Environment, Social & Governance chapter of our full year 2021 Annual Report & Accounts.

Disclaimer

Important Notice

The information, statements and opinions set out in this document are for informational and reference purposes only and do not constitute a public offer for the purposes of any applicable law or an offer to sell or solicitation of any offer to purchase any securities or other financial instruments or any advice or recommendation in respect of such securities or other financial instruments.

This document, which does not purport to be comprehensive nor render any form of legal, tax, investment, accounting, financial or other advice, has been provided by HSBC Holdings plc (together with its consolidated subsidiaries, the "Group") and has not been independently verified by any person. You should consult your own advisers as to legal, tax investment, accounting, financial or other related matters concerning any investment in any securities. No responsibility, liability or obligation (whether in tort, contract or otherwise) is accepted by the Group or any member of the Group or any of their affiliates or any of its or their officers, employees, agents or advisers (each an "Identified Person") as to or in relation to this document (including the accuracy, completeness or sufficiency thereof) or any other written or oral information made available or any errors contained therein or omissions therefrom, and any such liability is expressly disclaimed.

No representations or warranties, express or implied, are given by any Identified Person as to, and no reliance should be placed on, the accuracy or completeness of any information contained in this document, any other written or oral information provided in connection therewith or any data which such information generates. No Identified Person undertakes, or is under any obligation, to provide the recipient with access to any additional information, to update, revise or supplement this document or any additional information or to remedy any inaccuracies in or omissions from this document. Past performance is not necessarily indicative of future results. Differences between past performance and actual results may be material and adverse.

Forward-Looking statements

This document may contain projections, estimates, forecasts, targets, opinions, prospects, results, returns and forward-looking statements which can be identified by the use of forward-looking terminology such as "may", "will", "should", "expect", "anticipate", "project", "plan", "estimate", "seek", "intend", "target" or "believe" or the negatives thereof or other variations thereon or comparable terminology (together, "forward-looking statements"), including the strategic priorities, financial, investment and capital targets and ESG targets/commitments. Any such forward-looking statements are not a reliable indicator of future performance, as they may involve significant stated or implied assumptions and subjective judgements which may or may not prove to be correct. There can be no assurance that any of the matters set out in forward-looking statements are attainable, will actually occur or will be realised or are complete or accurate. The assumptions and judgments may prove to be incorrect and involve known and unknown risks, uncertainties, contingencies and other important factors, many of which are outside the control of the Group. Actual achievements, results, performance or other future events or conditions may differ materially from those stated, implied and/or reflected in any forward-looking statements due to a variety of risks, uncertainties and other factors (including without limitation those which are referable to general market conditions or regulatory changes and due to the impact of Covid-19). Any such forward-looking statements are based on the beliefs, expectations and opinions of the Group at the date the statements are made, and the Group does not assume, and hereby disclaims, any obligation or duty to update, revise or supplement them if circumstances or management's beliefs, expectations or opinions should change. For these reasons, recipients should not place reliance on, and are cautioned about relying on, any forward-looking statements. No representations or warranties, expressed or implied, are given by or on behalf of the Group as to the achievement or reasonableness of any projections, estimates, forecasts, targets, prospects or returns contained herein.

Additional detailed information concerning important factors that could cause actual results to differ materially from this document is available in our Annual Report and Accounts for the fiscal year ended 31 December 2020 filed with the Securities and Exchange Commission (the "SEC") on Form 20-F on 24 February 2021 (the "2020 Form 20-F"), and in other reports on Form 6-K furnished to or filed with the SEC subsequent to the 2020 Form 20-F.

Information in this document was prepared as at 30 June 2021, unless otherwise stated.



i	UN Environment Programme, 2020
ii	UNFCCC, The Paris Agreement
iii	G7 Summit Communiqué, 2021
iv	UN, Mark Carney, UN Race to Zero campaign, COP26 Presidency launch Net Zero Financial Alliance, 2021
v	HSBC, HSBC joins global Net Zero Banking Alliance, 2021
vi	Climate Policy Initiative, Global Landscape of Renewable Energy Finance, 2020
vii	HSBC, Providing Sustainable Finance
viii	Climate Bonds Initiative, 2021 Green Forecast Updated to Half a Trillion – Latest H1 Figures Signal New Surge in Global Green, Social & Sustainability Investment, August 2021
ix	‘Green bonds exceed analysts’ lofty expectations’, Financial Times, July 2021
x	European Commission, Commission Proposal for an European Green Bond Standard
xi	HSBC Pollination Climate Asset Management
xii	HSBC, HSBC helps UK raise funds to fight climate change, 2021
xiii	Euromoney Awards for Excellence 2021
xiv	Environmental Finance Bond Awards 2021
xv	HSBC, Providing Sustainable Finance
xvi	ESG reporting centre HSBC Holdings plc