

The UK and COP26

A difficult juncture for major change

Free to View Climate Change & Economics - UK

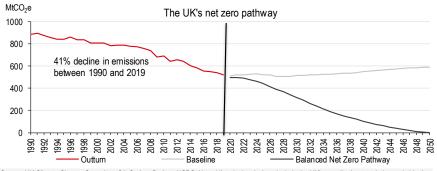
- As the host of COP26, the world's attention will be on the UK
- Existing policies are long on ambition, but a little lean on funding
- And the backdrop of slowing growth and rising interest rates makes big announcements on spending or taxation difficult

The COP26 summit will be held in Glasgow from 31 October to 12 November. In this note, we take a closer look at the host nation itself. We examine the UK's pledges on climate action and what it will take to achieve them, the economic backdrop of the summit, and why that might prove an impediment to some of the government's ambitions.

10 points, one goal: The UK has legislated for a 78% reduction in emissions by 2035, and net zero emissions by 2050. The 10-point plan that forms the basis of this is ambitious. We are concerned that it may not go far enough to achieve either the 2035 or the 2050 goals. We think the plan is lean on the public financing side; we calculate just c.25% of the investment plan is carved-out public money, with the remainder expected to come from private sector investments. By contrast, in the EU, over 50% of the Green Deal financing has been pledged from the EU Budget. Priority areas of the UK plan include clean energy and transport, and energy-efficient buildings. We think this will require significant infrastructure and consumer behaviour shifts.

Who pays?: An estimate by the Office for Budget Responsibility (OBR) in July put the cost to the UK government of achieving the 2050 net zero goal at GBP344bn over 30 years – with three times that amount coming from the private sector. To get close to this, we might expect some announcements at COP26 on spending or taxation policies. But the conference comes at an exceptionally difficult juncture: the government is aiming to stabilise the public finances, and consumers and businesses are already facing acute cost pressures, not least from higher energy prices. The proposed gas levy (Times, 9 October), will be a key test of how far the government is able to go in pursuit of its lofty ambitions.

1. The UK has a huge challenge ahead



Source: UK Climate Change Committee 6th Carbon Budget, HSBC. Note: Historical emissions include the UK's contribution to aviation and shipping. Baseline estimation represents a BAU scenario, where no further climate action is taken beyond current policies.

This is an abridged version of a report by the same title published on 14-Oct-21. Please contact your HSBC representative or email AskResearch@hsbc.com for more information.

Disclosures & Disclaimer

This report must be read with the disclosures and the analyst certifications in the Disclosure appendix, and with the Disclaimer, which forms part of it.

Lucy Acton, CFA ESG Analyst

HSBC Bank plc

Elizabeth Martins Senior Economist HSBC Bank plc

Wai-Shin Chan, CFA

Head, Climate Change Centre; Head, ESG Research The Hongkong and Shanghai Banking Corporation Limited

Issuer of report: HSBC Bank plc

View HSBC Global Research at: https://www.research.hsbc.com



The UK and COP26

- Decarbonisation needs to occur at a faster pace than seen to date
- ◆ 10-point plan ambitious but lean on public funding and lacking details
- Climate adaptation considerations are now increasingly important

Lucy Acton, CFA ESG Analyst HSBC Bank plc COP26 is widely accepted to be the world's last chance to align by 2030 to a net zero emissions trajectory, and thus to keep global average temperature increases below 1.5°C, in line with the Paris Agreement. Doing this is critical, according to climate scientists, if humanity is to avoid climate "tipping points" which, if reached, would have dramatic implications for investors, economies and humanity. The challenges are huge given the scale of the task, the backdrop of the pandemic, and geopolitical tensions.

The UK has stepped up its climate rhetoric over the past year, becoming the first country in the world to legislate a net zero emissions commitment by 2050, alongside an ambitious target to cut emissions by 78% by 2035. Ambitious targets are important, but those alone do not solve the climate crisis.

We outline the key goals/agenda items for COP26, from the UK's perspective, in Figure 1. In the run-up to COP26, the UK has been urging G20 nations to follow its example and strive for national net zero emissions targets – a commitment that some but not all of the major emitters around the world have pledged to achieve. The UK – alongside the UN and other countries – has also called for all nations around the world to upgrade their climate ambition, and formalise this with strengthened pledges to the Paris Agreement (known as NDCs – Nationally Determined Contributions) in advance of or during COP26.

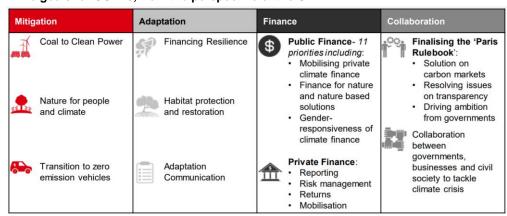
Climate mitigation

The UK has had a strong record of emissions reductions in recent years, with emissions demonstrating a generally downward trend since the 1970s, and falling 45% since 1990 (excluding aviation and shipping emissions). This trajectory speaks well of the UK's approach, since global emissions have grown by 52% between 1990 and 2018. However, it is the emissions trajectory for 2030 and 2050 that matters going forward, and those policy directives are yet to be implemented.

In order to meet future carbon budgets, the UK will still need to drive ahead with broad, economy-wide decarbonisation, at an even greater rate than was achieved between 1990 and 2018 (Chart 4).

Rapid rates of decarbonisation required

2. The goals for COP26, from the perspective of the UK

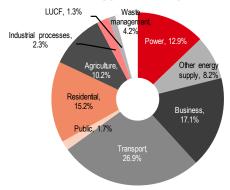


Source: UK COP26 website

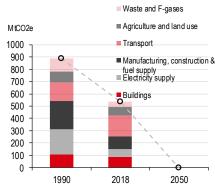


Only this time, progress will require decarbonisation of much harder to abate sectors with the added challenge of the recent inclusion of international shipping and aviation in emissions accounting. The UK's 10-point plan, announced last year, will assist with the economic transition.

3. Transport the biggest emitting sector



4. Deep emissions cuts are still required



Source: UK Climate Change Committee 6th Carbon Budget

Source: National statistics, 2019 emissions

The transport sector

Transport is now the UK's largest-emitting sector, contributing to over a quarter of all greenhouse gas (GHG) emissions. This is followed by residential, business and power sectors, all of which likely reflect high emissions from heating and power supply to buildings, amongst other things (Chart 3).

One of the most transformative pledges in the UK's 10-point plan is to phase out sales of new petrol and diesel vehicles by 2030 and hybrid cars and vans by 2035. In 2020, battery electric vehicles (BEVs) made up just 6.6% of the UK car market (source: Society of Motor Manufacturers and Traders). In our view, price points, infrastructure challenges and consumer sentiment are all contributing to this low (albeit increasing) share of BEVs in the market. We think government policy to overcome these hurdles will be important.

Phasing out ICEs by 2030

Ships and planes take the challenge to new heights

In December 2020, the UK's Climate Change Committee announced the sixth annual carbon budget alongside the news that the UK now includes contributions to international aviation and shipping emissions into carbon budgets and emissions reporting.

Including these sectors changes the emissions and carbon budgeting story somewhat. Under this new measure of emissions, the UK has reduced emissions by 41% since 1990, not 45%; no small change given the little slack there is if the UK is to meet carbon budgets. We think the need for significant *domestic* decarbonisation is now imperative.

Aviation and shipping are particularly hard to abate sectors and international decarbonisation progress in these sectors is likely to be slow. We note that R&D to "support research projects for zero-emission planes and ships" is now a core tenet of the UK's 10-point plan strategy, now particularly important for the UK given this emissions accounting change.

The 10-point plan

The 10-point plan, set out by the government in November 2020, is designed to aid the net zero transition. Priority areas include clean energy, transport, energy-efficient buildings, and reforestation.

Overall, we are concerned that, while ambition is clear, translating these targets into reality will rely on significant structural changes and altered consumer behaviour. We think the government could face increasing pressure to act in three key areas, alongside the 10-point plan, in order to strengthen the climate mitigation response:

- 1) Doing more to curb current emissions
- 2) Providing the private sector with more guidance and specific details about the transition
- 3) Helping to nudge consumer behaviour

Decarbonisation rates need

to step up



Curbing current emissions and "net zero" tests

Money in, emissions out

Given the scale of the net zero and 2035 targets, we think the UK will increasingly need to focus on curbing current emissions, as well as investing for future emissions cuts. This could be reducing support (financial or regulatory) for high-emitting activities, and for having more scrutiny over current "net zero" spending and taxation plans.

Guidance for the private sector

Help me, help you

"Nudge" policies for

mitigation

We think more could and should be done to help businesses shoulder some of the decarbonisation burden. In our view, the current 10-point plan lacks the detail that businesses need to up their own transition stories, and therefore the decarbonisation of the UK economy.

A behavioural shift

To fully align to net zero, we believe significant changes to the structure and pattern of consumption will need to occur. This will rely on nudge policies that shape consumer, business and investor behaviour. This will involve behavioural changes around consuming less and recycling more, diet preferences and car purchases (switching to EVs).

Finance

Lean, and reliant on the private sector

The UK has announced GBP12bn of public sector investment to implement the 10-point plan. It also plans to "potentially mobilise 3x as much" investment in the private sector. We think the UK is relying quite heavily on the private sector in this investment plan, compared to the investment plan for the EU "Green Deal" to reach net zero emissions by 2050.

We estimate that the EU Green Deal plan allocates c.2.6x more funds to every unit of emissions that still need to be decarbonised, than the UK's 10-point plan does (Table 5). And, much more of the EU funding guaranteed from the public sector currently (>50%), compared to the UK (c.25%).

5. Comparing the 10-point plan and the Sustainable Europe Investments

	UK 10-point plan (GBP)	EU Green Deal (EUR)
Headline investment plan for 2030 targets	12bn	1trn
Private sector investments	Mobilise c.3x public investment	Included in the EUR 1tm
Total public and private	c.48bn	1trn
Of which is public investment (%)	c.25%	>50%
Pledged emissions reduction 1990-2030	68%	55%
Remaining reduction still required by 2030 (%)*	c.27%	c.32%
Investment/emissions outstanding (LCU/CO2e)	237.3	710.5
Investment/emissions outstanding (GBP/CO2e)**	237.3	611.0
		2.6x greater

Source: WRI CAIT, Government resources, HSBC calculations. Emissions are total including LULUCF.

*HSBC calculations for remaining emissions reduction still required by 2030 (vs 1990) levels, given 2018 emissions. Based on WRI CAIT emissions data and national pledges of 68% and 55% reductions since 1990 for UK and EU respectively. WRI CAIT data has been used for comparability reasons. Note that the UK's actual investment plan is dedicated for the years 2023 to 2032, for a 180MtCO2e emissions reduction. **Assumed exchange rate 1EUR=0.86GBP

Adaptation

Looking beyond climate mitigation

Mitigating greenhouse gas emissions is a critical part of the climate response. But it is not the only measure of successful climate policy. Climate adaptation – preparing for the climate change impacts that will invariably arrive – is another important part of the response.

The physical impacts of climate change can cause significant damage to infrastructure and supply chains, as well as loss of lives and livelihoods. Despite the risks being most acute in emerging markets, the UK and other developed economies are still exposed to them.

In order to adapt to these new risks, the UK – alongside all other nations around the world – will need to build climate resilience. This includes investments to improve traditional infrastructure such as roads and bridges along with telecoms and public transport infrastructure as well as building up coastal defences in areas of low lying land.

Preparing for the impacts of climate change typically demands significant public sector involvement; only 2% of climate adaptation spend was from private sectors in 2018 (Climate Policy Initiative). We will be watching the UK's rhetoric around climate adaptation closely during COP26 and beyond.

Building climate resilience



The economics: who pays?

- There will never be a convenient time for radical change, but the COP26 summit comes at a particularly difficult juncture for the UK...
- ... with rising inflation and supply challenges already weighing on the government, households and businesses
- Against this backdrop, the proposed gas levy will be a key test of the battle between ambition and political pragmatism

Show me the money

Saving the planet is expensive

As laid out above, the UK has ambitious goals to tackle climate change – and the COP26 summit is getting a lot of airtime from the UK government and media. The goals are easily agreed upon. The much harder question is: what is the cost, and who will bear it?

The OBR's central case projections states the government will bear a quarter of the net costs, or GBP344bn over 30 years – less than what the government spent on its response to COVID-19 and less than the implied net cost for the private sector of just over GBP1trn in the same period.

But the current UK government is aiming to stabilise public finances and protect households from the cost of going green. This suggests it expects corporates to step up, invest and absorb the costs and Households, too, are already facing an income shock that may deter them from making expensive decisions – unless forced to by taxation. With UK taxation as a percentage of GDP expected to reach its highest level since the second world war, it all makes for a difficult set of decisions for this and future governments.

Government spending plans (and their possible limits)

The UK government has laid out GBP12bn for domestic initiatives and GBP11.6bn for international aid. But the OBR's central case suggests government spending on green initiatives needs to average almost GBP12bn *annually* over 30 years to fulfil a quarter of the cost of achieving net zero by 2050 (chart 6). The total cost over 30 years amounts to GBP344bn – 15% less than what was spent *in two years* to support the economy in the COVID-19 pandemic.

So can we expect more spending pledges in the 27 October Budget? Certainly, markets are keen to lend to green initiatives: the UK's first green gilt was oversubscribed by a factor of ten and priced with a negative 'greenium' (i.e. the spread of a green bond over a non-green bond). Moreover, any spending classified as investment would be outside of the realm of the current budget¹.

But the government is in fiscal consolidation mode: Chancellor Rishi Sunak said that it would be "immoral" to rack up more debt. This summer, PM Boris Johnson indicated that the UK's efforts would be focussed on the 'cash' component of his four-part target – persuading other countries to go further in their own commitments. Though there may be some green spending in the 27 October Budget, we don't think there will be much more in the way of cash commitments. Indeed, even the commitment to international climate finance comes from the existing foreign aid budget, rather than being new money².

Elizabeth Martins

Senior Economist HSBC Bank plc

Is GBP12bn enough?

Investors are keen to buy into the UK's green agenda

¹ FT, Rishi Sunak to set out new fiscal rules to rein in UK borrowing, 16 September 2021

² The Independent, Boris Johnson's £11.6bn climate fund to be swiped from aid budget, 11 July 2021



6.The OBR estimates high costs to the public sector – even if it assumes just a quarter of the burden



Source: OBR Fiscal Risks Report, July 2021

Logistical difficulties

We suspect even existing spending pledges may not be met, given (a) historical trends of underspending and (b) supply constraints. Labour shortages across the economy could last two years according to the Confederation of British Industry. Then there are logistical difficulties in take-up of Green Programmes.

Households: voluntary and involuntary contributions

There are two ways in which UK households will find themselves contributing to the net zero agenda: voluntarily – in behavioural ways like reducing waste or recycling – and involuntarily, through taxation and potentially through higher costs of sustainably produced goods.

Both are likely to be expensive initially. Furthermore, as the FT reported in late September a "new surge in demand for sustainable products has collided with COVID-19 supply chain disruptions, pushing up prices for green goods³, which may put the brakes on expensive voluntary changes.

But there are some bright spots. Current shortages may accelerate some greener choices: a scarcity of slaughterhouse staff may intensify the trend towards plant-based diets. Meanwhile, around 33,000 new BEVs were sold in September 2021 according to the Society of Motor Manufacturers and Traders (SMMT).

Time for more tax?

What about involuntary, government-mandated changes? This is where the dilemma gets tough for the government. Even before the cost of living started to make the headlines, PM Boris Johnson had pledged to protect households from the costs of the green agenda.

Against this backdrop, there were reports in August that the government was planning to water down plans to ban the sale of gas boilers from 2030⁴. However, on 9 October, the Times reported that the government was planning to introduce a new gas levy, while cutting tax on electricity, to encourage the switch away from gas, starting from 2023⁵. Yet the report also quotes sources from within the Conservative Party, and even within the government, expressing deep opposition to the moves.

What else might we see in the way of taxes on households? Successive UK governments have frozen fuel tax duty since 2010, so allowing that to rise is one possibility. However, with inflation already squeezing incomes, it might fear that further price rises could spark a UK version of the 'gilets jaunes' protests that affected France in late 2018 and early 2019.

The government might also consider taxation on other emission-heavy industries, like aviation. But neither of these feel particularly likely and with many consumers having foregone foreign travel for the best part of 18 months – increased tax there would also be controversial.

Even spending currently pledged funds could prove tricky

For households, going green could be expensive

Appetite for electric cars appears strong, at least

We don't expect fuel or air passenger tax to go up

³ FT, Politicians need to be more active when it comes to greenflation, 30 September 2021

⁴ FT, Johnson poised to backtrack on mid-2030s gas boiler ban, 11 August 2021

⁵ The Times, Energy crisis: Gas levy gets green light as factories warn of closures, 9 October 2021



The OBR projections assume that lost fuel revenues will be offset by new taxes. Replacing the various taxes associated with driving with a like-for-like equivalent, is one thing. But going further, with a tax on air travel, for example, could prove politically unpalatable.

More tax for companies?

The remainder of the burden will fall on companies

We have discussed the role of the government and its citizens in reducing the country's net emissions to zero – and its limitations. That leaves the UK's companies to shoulder the remainder of the burden. Indeed, both the government's Ten Point Plan and the OBR estimates agree that the private sector contribution should greatly outweigh the government contribution.

What might this entail? As with consumers, it falls into two categories: voluntary changes, which may be expensive in the near term, but cost effective, productivity-enhancing and investor-pleasing further out; and involuntary changes, like government mandates on emissions and/or higher taxation.

Carbon pricing could be ramped up

The Climate Change Committee has recommended greater use of carbon taxes, which it argues would "support the public finances while strengthening incentives to reduce emissions". It suggests that these additional taxes could apply on a downstream basis but also on an upstream one, by "maximising consumer-visibility (through carbon labelling) and taking account of full lifecycle emissions for both imported and domestic production". Some campaigners would also like to see the UK applying a carbon border tax, like the one proposed by the EU earlier this year.

Announcing yet more tax on companies could be controversial

We do not think the UK is on the point of announcing any of these changes ahead of COP26, despite the potential benefits. As noted above, the Times has reported plans to redress the balance on household energy – but not via a standardised carbon tax. To tax business more broadly on its emissions would add to the two significant tax rises businesses are already facing: the national insurance contributions starting from April 2022 and then the corporation tax rise from April 2023. This on top of the pressures companies are facing from sharply rising input costs and debt built up as a consequence of the pandemic, and reduced competitiveness due to Brexit.

Conclusions

There will never been a convenient time to make major, expensive changes in order to reduce emissions, but the COP26 summit comes at a particularly difficult juncture. The UK government, households and corporations all face higher costs and logistical challenges in the coming year or so. The tax burden is already at its highest since the second world war, and consumers are already facing an income squeeze. It would be a bold government which would come out with radical policy changes at COP26 in this policy environment, at this moment. Whether it can implement the reported gas levy will be a key test of its ambition, versus the needs of political pragmatism.



Disclosure appendix

Analyst Certification

The following analyst(s), economist(s), or strategist(s) who is(are) primarily responsible for this report, including any analyst(s) whose name(s) appear(s) as author of an individual section or sections of the report and any analyst(s) named as the covering analyst(s) of a subsidiary company in a sum-of-the-parts valuation certifies(y) that the opinion(s) on the subject security(ies) or issuer(s), any views or forecasts expressed in the section(s) of which such individual(s) is(are) named as author(s), and any other views or forecasts expressed herein, including any views expressed on the back page of the research report, accurately reflect their personal view(s) and that no part of their compensation was, is or will be directly or indirectly related to the specific recommendation(s) or views contained in this research report: Lucy Acton, CFA, Elizabeth Martins and Wai-Shin Chan, CFA

Important disclosures

This document has been prepared and is being distributed by the Research Department of HSBC and is not for publication to other persons, whether through the press or by other means.

This document is for information purposes only and it should not be regarded as an offer to sell or as a solicitation of an offer to buy the securities or other investment products mentioned in it and/or to participate in any trading strategy. Advice in this document is general and should not be construed as personal advice, given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs. If necessary, seek professional investment and tax advice.

Certain investment products mentioned in this document may not be eligible for sale in some states or countries, and they may not be suitable for all types of investors. Investors should consult with their HSBC representative regarding the suitability of the investment products mentioned in this document and take into account their specific investment objectives, financial situation or particular needs before making a commitment to purchase investment products.

The value of and the income produced by the investment products mentioned in this document may fluctuate, so that an investor may get back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Value and income from investment products may be adversely affected by exchange rates, interest rates, or other factors. Past performance of a particular investment product is not indicative of future results.

HSBC and its affiliates will from time to time sell to and buy from customers the securities/instruments, both equity and debt (including derivatives) of companies covered in HSBC Research on a principal or agency basis or act as a market maker or liquidity provider in the securities/instruments mentioned in this report.

Analysts, economists, and strategists are paid in part by reference to the profitability of HSBC which includes investment banking, sales & trading, and principal trading revenues.

Whether, or in what time frame, an update of this analysis will be published is not determined in advance.

For disclosures in respect of any company mentioned in this report, please see the most recently published report on that company available at www.hsbcnet.com/research. HSBC Private Banking clients should contact their Relationship Manager for queries regarding other research reports. In order to find out more about the proprietary models used to produce this report, please contact the authoring analyst.

Additional disclosures

- 1 This report is dated as at 14 October 2021.
- 2 All market data included in this report are dated as at close 11 October 2021, unless a different date and/or a specific time of day is indicated in the report.
- HSBC has procedures in place to identify and manage any potential conflicts of interest that arise in connection with its Research business. HSBC's analysts and its other staff who are involved in the preparation and dissemination of Research operate and have a management reporting line independent of HSBC's Investment Banking business. Information Barrier procedures are in place between the Investment Banking, Principal Trading, and Research businesses to ensure that any confidential and/or price sensitive information is handled in an appropriate manner.
- 4 You are not permitted to use, for reference, any data in this document for the purpose of (i) determining the interest payable, or other sums due, under loan agreements or under other financial contracts or instruments, (ii) determining the price at which a financial instrument may be bought or sold or traded or redeemed, or the value of a financial instrument, and/or (iii) measuring the performance of a financial instrument or of an investment fund.



Disclaimer

Legal entities as at 1 December 2020

'UAE' HSBC Bank Middle East Limited, DIFC; HSBC Bank Middle East Limited, Dubai; 'HK' The Hongkong and Shanghai Banking Corporation Limited, Hong Kong; 'TW' HSBC Securities (Taiwan) Corporation Limited; 'CA' HSBC Securities (Canada) Inc.; 'France' HSBC Continental Europe; 'Spain' HSBC Continental Europe, Sucursal en España; 'Italy' HSBC Continental Europe, Italy; 'Sweden' HSBC Continental Europe Bank, Sweden Filial; 'DE' HSBC Trinkaus & Burkhardt AG, Düsseldorf; 000 HSBC Bank (RR), Moscow; 'IN' HSBC Securities and Capital Markets (India) Private Limited, Mumbai; 'JP' HSBC Securities (Japan) Limited, Tokyo; 'EG' HSBC Securities Egypt SAE, Cairo; 'CN' HSBC Investment Bank Asia Limited, Beijing Representative Office; The Hongkong and Shanghai Banking Corporation Limited, Singapore Branch; The Hongkong and Shanghai Banking Corporation Limited, Seoul Branch; HSBC Securities (South Africa) (Pty) Ltd, Johannesburg; HSBC Bank plc, London, Tel Aviv; 'US' HSBC Securities (USA) Inc, New York; HSBC Yatirim Menkul Degerler AS, Istanbul; HSBC México, SA, Institución de Banca Múltiple, Grupo Financiero HSBC; HSBC Bank Australia Limited; HSBC Bank Argentina SA; HSBC Saudi Arabia Limited; The Hongkong and Shanghai Banking Corporation Limited, New Zealand Branch incorporated in Hong Kong SAR; The Hongkong and Shanghai Banking Corporation Limited, Bangkok Branch; PT Bank HSBC Indonesia; HSBC Qianhai Securities Limited; Banco HSBC S.A.

Issuer of report
HSBC Bank plc
8 Canada Square, London
E14 5HQ, United Kingdom
Telephone: +44 20 7991 8888
Fax: +44 20 7992 4880
Website: www.research.hsbc.com

In the UK, this publication is distributed by HSBC Bank plc for the information of its Clients (as defined in the Rules of FCA) and those of its affiliates only. Nothing herein excludes or restricts any duty or liability to a customer which HSBC Bank plc has under the Financial Services and Markets Act 2000 or under the Rules of FCA and PRA. A recipient who chooses to deal with any person who is not a representative of HSBC Bank plc in the UK will not enjoy the protections afforded by the UK regulatory regime. HSBC Bank plc is regulated by the Financial Conduct Authority and the Prudential Regulation Authority. If this research is received by a customer of an affiliate of HSBC, its provision to the recipient is subject to the terms of business in place between the recipient and such affiliate. In Australia, this publication has been distributed by The Hongkong and Shanghai Banking Corporation Limited (ABN 65 117 925 970, AFSL 301737) for the general information of its "wholesale" customers (as defined in the Corporations Act 2001). Where distributed to retail customers, this research is distributed by HSBC Bank Australia Limited (ABN 48 006 434 162, AFSL No. 232595). These respective entities make no representations that the products or services mentioned in this document are available to persons in Australia or are necessarily suitable for any particular person or appropriate in accordance with local law. No consideration has been given to the particular investment objectives, financial situation or particular needs of any recipient. In the European Economic Area, this publication has been distributed by HSBC Continental Europe or by such other HSBC affiliate from which the recipient receives relevant services

The document is distributed in Hong Kong by The Hongkong and Shanghai Banking Corporation Limited and in Japan by HSBC Securities (Japan) Limited. Each of the companies listed above (the "Participating Companies") is a member of the HSBC Group of Companies, any member of which may trade for its own account as Principal, may have underwritten an issue within the last 36 months or, together with its Directors, officers and employees, may have a long or short position in securities or instruments or in any related instrument mentioned in the document. Brokerage or fees may be earned by the Participating Companies or persons associated with them in respect of any business transacted by them in all or any of the securities or instruments referred to in this document. In Korea, this publication is distributed by either The Hongkong and Shanghai Banking Corporation Limited, Seoul Securities Branch ("HBAP SLS") or The Hongkong and Shanghai Banking Corporation Limited, Seoul Branch ("HBAP SEL") for the general information of professional investors specified in Article 9 of the Financial Investment Services and Capital Markets Act ("FSCMA"). This publication is not a prospectus as defined in the FSCMA. It may not be further distributed in whole or in part for any purpose. Both HBAP SLS and HBAP SEL are regulated by the Financial Services Commission and the Financial Supervisory Service of Korea. This publication is distributed in New Zealand by The Hongkong and Shanghai Banking Corporation Limited, New Zealand Branch incorporated in Hong Kong SAR.

The information in this document is derived from sources the Participating Companies believe to be reliable but which have not been independently verified. The Participating Companies make no guarantee of its accuracy and completeness and are not responsible for errors of transmission of factual or analytical data, nor shall the Participating Companies be liable for damages arising out of any person's reliance upon this information. All charts and graphs are from publicly available sources or proprietary data. The opinions in this document constitute the present judgement of the Participating Companies, which is subject to change without notice. From time to time research analysts conduct site visits of covered issuers. HSBC policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the issuer for such visits. This document is neither an offer to sell, purchase or subscribe for any investment nor a solicitation of such

HSBC Securities (USA) Inc. accepts responsibility for the content of this research report prepared by its non-US foreign affiliate. The information contained herein is under no circumstances to be construed as investment advice and is not tailored to the needs of the recipient. All US persons receiving and/or accessing this report and intending to effect transactions in any security discussed herein should do so with HSBC Securities (USA) Inc. in the United States and not with its non-US foreign affiliate, the issuer of this report. In Singapore, this publication is distributed by The Hongkong and Shanghai Banking Corporation Limited, Singapore Branch for the general information of institutional investors or other persons specified in Sections 274 and 304 of the Securities and Futures Act (Chapter 289) ("SFA") and accredited investors and other persons in accordance with the conditions specified in Sections 275 and 305 of the SFA. Only Economics or Currencies reports are intended for distribution to a person who is not an Accredited Investor, Expert Investor or Institutional Investor as defined in SFA. The Hongkong and Shanghai Banking Corporation Limited, Singapore Branch accepts legal responsibility for the contents of reports pursuant to Regulation 32C(1)(d) of the Financial Advisers Regulations. This publication is not a prospectus as defined in the SFA. This publication is not a prospectus as defined in the SFA. It may not be further distributed in whole or in part for any purpose. The Hongkong and Shanghai Banking Corporation Limited Singapore Branch is regulated by the Monetary Authority of Singapore. Recipients in Singapore should contact a "Hongkong and Shanghai Banking Corporation Limited Singapore Branch" representative in respect of any matters arising from, or in connection with this report. Please refer to The Hongkong and Shanghai Banking Corporation Limited Singapore Branch's website at www.business.hsbc.com.sg for contact details. HSBC México, S.A., Institución de Banca Múltiple, Grupo Financie

In Canada, this document has been distributed by HSBC Securities (Canada) Inc. (member IIROC), and/or its affiliates. The information contained herein is under no circumstances to be construed as investment advice in any province or territory of Canada and is not tailored to the needs of the recipient. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed judgment upon these materials, the information contained herein or the merits of the securities described herein, and any representation to the contrary is an offense. In Brazil, this document has been distributed by Banco HSBC S.A. ("HSBC Brazil"), and/or its affiliates. As required by Instruction No. 598/18 of the Securities and Exchange Commission of Brazil (Comissão de Valores Mobiliários), potential conflicts of interest concerning (i) HSBC Brazil and/or its affiliates; and (ii) the analyst(s) responsible for authoring this report are stated on the chart above labelled "HSBC & Analyst Disclosures".

The document is intended to be distributed in its entirety. Unless governing law permits otherwise, you must contact a HSBC Group member in your home jurisdiction if you wish to use HSBC Group services in effecting a transaction in any investment mentioned in this document. HSBC Bank plc is registered in England No 14259, is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority and is a member of the London Stock Exchange. (070905)

If you are an HSBC Private Banking ("PB") customer with approval for receipt of relevant research publications by an applicable HSBC legal entity, you are eligible to receive this publication. To be eligible to receive such publications, you must have agreed to the applicable HSBC entity's terms and conditions for accessing research and the terms and conditions of any other internet banking service offered by that HSBC entity through which you will access research publications ("the Terms"). Distribution of this publication is the sole responsibility of the HSBC entity with whom you have agreed the Terms. If you do not meet the aforementioned eligibility requirements please disregard this publication and, if you are a customer of PB, please notify your Relationship Manager. Receipt of research publications is strictly subject to the Terms and any other conditions or disclaimers applicable to the provision of the publications that may be advised by PB.

© Copyright 2021, HSBC Bank plc, ALL RIGHTS RESERVED. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, on any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of HSBC Bank plc. MCI (P) 028/02/2021, MCI (P) 087/10/2020

[1180034]