The Low-Carbon Transition in Private Markets

A discussion with investors

BlackRock

FOR QUALIFIED PURCHASERS, PROFESSIONAL CLIENTS, QUALIFIED INVESTORS, AND INSTITUTIONAL & WHOLESALE INVESTORS

Opportunities in transformation

September 2023

Contributors

David Giordano
Global Head
Climate Infrastructure

Thomas Mueller-Borja
Global CIO
Value-Add Real Estate

Sonia Rocher
Sustainability Lead
Investor
Private Debt

Key takeaways

- The transition to a low-carbon economy will transform the ways we make and use energy, move goods and people, and how we build and shape the environment.
- In infrastructure, the transition is creating opportunities to invest in new technologies with lower emissions.
- Real estate presents new opportunities as owners upgrade buildings to meet regulatory requirements and the demands of tenants.
- Private debt, with its close connections to the leaders of the companies it finances, can be instrumental to how the broader economy is transitioning.

Introduction

The low-carbon transition is underway, a historic change in the world around us. Accelerated by policy incentives, new technologies and shifting consumer preferences, the transition is one of the major trends that will shape the economy of the future.

It represents an enormous opportunity for investors.

The BlackRock Investment Institute estimates that investment in the world's energy system will increase to US$3.5 trillion a year this decade, up from US$2.2 trillion in recent years. By the 2040s that annual figure may be as much as US$4.5 trillion. And that's just the most direct effect of the transition; there are also downstream opportunities in a wide range of sectors from transportation to manufacturing to real estate and beyond.

While the transition will make an impact across regions and industries, the pace of change will likely vary among sectors and geographies. Investors in all asset classes are busy looking for the best opportunities.

To get a sense of the possibilities presented by the low-carbon transition, we spoke to three of our leading investors in infrastructure, real estate and private debt to see how they are looking at the opportunities and developments in their areas.

From an investment perspective, what do you find most exciting about the low-carbon transition today?

David Giordano: I spent my career in renewables and in the energy markets, and it's really exciting to be in this age of full implementation. The low-carbon transition has been moving forward for a long time now – the last 20-plus years. But this acceleration, and the full commitment throughout the ecosystem of implementation in infrastructure and across the broader economy is something new.

Thomas Mueller-Borja: I agree that it's a big moment for investors. The transition to more sustainable buildings is the biggest structural change to real estate since the electrification of buildings in the 1920s. It can be terrifying to some investors, but we see it as an incredibly exciting investment opportunity.

Sonia Rocher: I find the role that we can play as investors to help companies accelerate their transition journey very exciting. A lot of our limited partners want us to engage with companies as we have the expertise to help them on the journey. It's exciting to see that it's a collective push across LPs, general partners, corporate management teams and consumers.

What's unique about the opportunities you're seeing?

DG: From an opportunity standpoint, you've got policy support at a global scale. It started in Europe, and then you had the Inflation Reduction Act in the U.S., followed by the response from Europe with the Green Deal Industrial Plan.

And there's also what we're seeing in the Asia-Pacific countries in terms of facilitating new renewables, battery energy storage, and reshaping the whole way electricity is generated, stored and supplied.

The other side is the technology. Energy storage and the electrification of transport, for example, will continue to see advances in terms of efficiencies and the cost curve continuing to come down. And those advances play into the consumer side. The adoption rates for electric vehicles, which disappointed in the short term, are far outpacing our medium-term predictions today. The long-term cost of electric vehicle ownership in many European countries is now already below that of gas-powered vehicles. And there's still room for cost curves to go down as efficiencies improve.

TMB: I'd like to add to what David said about the role of regulation and policy. One prime example is in U.K. real estate. By 2030 every commercial building needs to have an Energy

The transition in action

79%
Reduction in battery costs over the past decade[1]

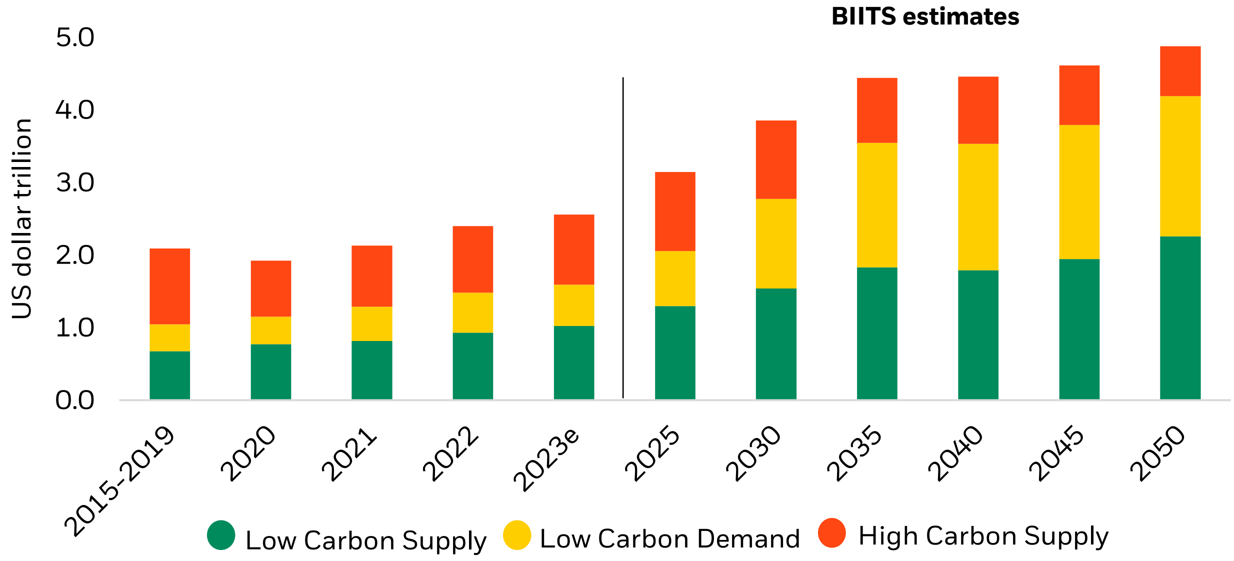
40%
Electric vehicle share of global passenger vehicle sales by 2030[2]

>$470B
U.S. pledged transition funding[3]

~€635B
EU pledged climate funding[3]

Source: 1. BloombergNEF, Top 10 Energy Storage Trends in 2023, 2. BloombergNEF, Electric Vehicle Outlook 2022. This figure reflects the report's Economic Transition Scenario, 3. BII, Rocky Mountain Institute, and European Commission, December 2022.

Investment on the way
Estimated annual energy sector capex, 2015-2050



Forward-looking estimates may not come to pass. Source: BlackRock Investment Institute and Aladdin Sustainability Analytics, with IEA data, June 2023. Notes: The chart shows the estimated breakdown of capital investment needs – both supply and demand – and the split between high- and low-carbon investments. Amounts are based on U.S. dollar values in 2020. Historical data and estimates through 2023 are based on IEA data. BIITS investment estimates start in 2025.

Performance Certificate rating of A or B. Today, 85% of the market is below that threshold. Most landlords don't have the capital or the expertise to reposition and conversions are often not viable.

The market is very much alive to the fact that if landlords don't make the necessary changes, they're going to end up with buildings that the banks won't accept as collateral. What's more, a lot of tenants, particularly businesses with their own emissions-based targets, won't want to stay in those buildings. For a vertically integrated operator like BlackRock it's a huge opportunity.

Things to consider: While the global low-carbon transition continues to expand and accelerate, there may be some headwinds:

- Climate policies around the world could be scaled back if transition goals conflict with issues like energy security and affordability.
- Permitting for low-carbon energy, such as wind turbines and large-scale solar, remains a challenge.
- Shortages of industrial materials may create significant bottlenecks as demand increases.

SR: With improved infrastructure, access to green real estate and green energy, companies now have more options to make decisions when it comes to their carbon footprint. This is relevant across the economy – for instance, software companies can consider the low-carbon transition when selecting their data center providers. As more large companies make pledges related to their carbon emissions, that trickles down to smaller companies, which form part of their supply chain.

Overall, when you look at energy consumption across sectors, companies are increasingly choosing to work with partners and technologies that help them meet their net-zero targets.

When we consider credit risk in the companies we are financing we look at how sustainable their business model is and how adaptable management teams are to evolving demands. For example, there are increasing requirements to incorporate the low-carbon transition and to set emission reduction targets. Naturally, some companies are more impacted than others.

How do you see the role of private markets in the low-carbon transition?

TMB: Private markets are creating momentum in real estate to either build greenfield buildings that address all the major emissions-related issues or retrofit and reposition existing buildings to take advantage of the rental premium and the sales premium delivered by these more sustainable buildings.

In the U.K., where regulations are more of a factor, that premium can be 12%-17%. That nicely frames the opportunity and the upside that can be achieved. It's not easy to price the opportunity everywhere, but it's definitely there – even in U.S. real estate, where regulation is less of a driver.

DG: Companies are starting to track their emissions much more tightly, and in new areas, such as the buildings in which they operate.

That all relates back to the investment opportunity of the technologies that facilitate decarbonization. Across the board, the transition to a low-carbon economy is an investment opportunity. But more than that, it's a lens through which to look at investing, and a lens through which to understand risk.

The transition itself is so large that taking advantage of it requires you to have a view on where the costs are going, and where the technologies are going. That's why it's so important for us as a firm to have organize ourselves around this investment theme as it affects all asset classes.

The transition itself is so large that taking advantage of it requires you to have a view on where the costs are going, and where the technologies are going. That's why it's so important for us as a firm to have organize ourselves around this investment theme as it affects all asset classes.

SR: As a direct lender to middle-market companies, we have the benefit of direct access to the companies, from the CEO and CFO down, and their majority shareholders.

We have dialogues with these leaders and, generally, most want to start the journey towards lower emissions and using more sustainable energy sources.

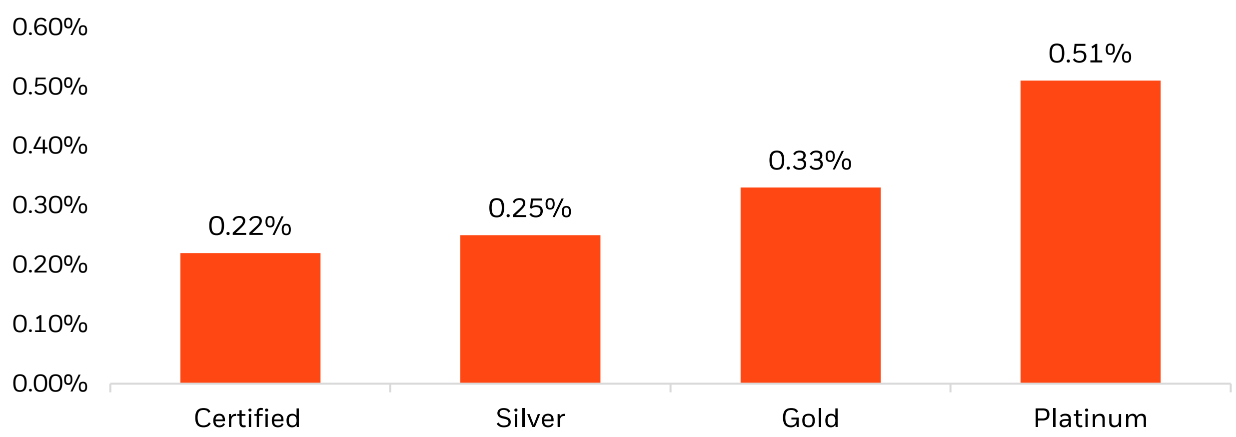
The issue is they don't have dedicated resources or industry benchmarks and often don't know where to start.

Where do you see the investment opportunities around the transition in the near future?

SR: The middle market forms around 50% of the economy and contributes roughly 50% of carbon emissions.[1] Yet most of these companies don't know their emissions or have access to carbon reporting. This process takes time and can be expensive.

Green premium

Additional rent growth per year



Source: CBRE Research Q2 2021, The US Green Building Council, CBRE Economic Advisors.

1.Institute of Environmental Management & Assessment, "SMEs see climate change as opportunity" as of September 27, 2011 and International Energy Agency, "Accelerating Energy Efficiency in Small and Medium-sized Enterprises" as of December 1, 2015

Medium-sized companies are starting to recognize that being part of the low-carbon transition is important for their business, especially as larger companies are already taking meaningful steps. These companies need partners to help start the journey and take necessary steps towards change. It starts with the basics and first is to understand their carbon footprint.

Currently, only about 20% of mid-market companies report on carbon emissions, which is incredibly low compared to large public companies. As a lender, there are a number of ways we can help companies accelerate their low-carbon transition efforts to drive better investment outcomes for our investors.

TMB: The transition in U.K. real estate is going to build momentum as we get closer to that 2030 deadline, because most landlords think seven years is a long time. But actually, to do what they need to do they need to start now.

The built environment contributes 40% of greenhouse gases, so it's obviously a big part of the solution. Reducing those emissions is the real opportunity.

But it all depends on infrastructure. As long as the grid isn't sustainable, it's almost impossible for us get to the low-carbon targets we want to get to.

DG: Yes, exactly. In infrastructure, we're thinking about the opportunity set at a global scale.

At the distribution level, you're seeing behind-the-meter solar, plus battery storage, and the off-take contracts associated with that. And we'll continue to see immense opportunities in every addressable market there.

On the energy transmission side, we'll continue to see opportunities to facilitate more efficient delivery of those electrons. At the same time, we'll see a broader decarbonization of electricity generation. That goes hand-in-glove with the further electrification of things like transportation, which will require massive investments across the grid.

Scaling up those new technologies to meet the massive commercial needs of the low-carbon transition necessitates a huge amount of investment in everything from generation facilities to the business of energy transmission and distribution, as well as the efficiency-enhancing technology for end users.

Disclaimer

FOR PROFESSIONAL, INSTITUTIONAL, WHOLESALE AND QUALIFIED INVESTORS/PROFESSIONAL, QUALIFIED AND PERMITTED CLIENT USE ONLY

RISKS

Capital at risk. The value of investments and the income from them can fall as well as rise and are not guaranteed. Investors may not get back the amount originally invested.

Past performance is not a reliable indicator of current or future results and should not be the sole factor of consideration when selecting a product or strategy.

Changes in the rates of exchange between currencies may cause the value of investments to diminish or increase. Fluctuation may be particularly marked in the case of a higher volatility fund and the value of an investment may fall suddenly and substantially. Levels and basis of taxation may change from time to time.

Bond Risk. Investing in the bond market is subject to certain risks including market, interest-rate, issuer, credit, and inflation risk.

High Yield Risk. High-yield, lower-rated, securities involve greater risk than higher-rated securities; portfolios that invest in them may be subject to greater levels of credit and liquidity risk than portfolios that do not. Non-investment-grade debt securities (high-yield/junk bonds) may be subject to greater market fluctuations, risk of default or loss of income and principal than higher-rated securities.

Derivatives may involve certain costs and risks such as liquidity, interest rate, market, credit, management and the risk that a position could not be closed when most advantageous. Investing in derivatives could lose more than the amount invested. Derivatives may be used to hedge investments or to seek to enhance returns. Derivatives entail risks relating to liquidity, leverage and credit that may reduce returns and increase volatility.

Infrastructure Risk. Portfolios that invest in Infrastructure investments may be materially and adversely affected by risks associated with the related infrastructure assets including construction and operator risks, environmental risks, legal and regulatory risks; political or social instability; governmental and regional political risks; sector specific risks; interest rate changes; currency risks; and other risks and factors which may or will impact infrastructure and as a result may substantially affect a fund's aggregate return. Investments in Infrastructure assets are typically illiquid and investors seeking to redeem their holdings in an Infrastructure Fund can experience significant delays and fluctuations in value.

Real Estate Risk. Funds that invest in real estate or property invest exclusively or almost exclusively in equity or debt, or equity or debt related instruments. Therefore, in addition to risks associated with investment in such equity or debt instrument, the performance of the real estate fund may be material and adversely affected by risks associated with the related real estate assets. Past performance of funds investing in real estate are not indicative of the performance of the real estate market as a whole and the value of real property will generally be a matter of a valuer's opinion rather than fact. The value of any real estate investment may be significantly diminished in the event of a downturn in the real estate market. Real estate investments are subject to many factors including adverse changes in economic conditions, adverse local market conditions and risks associated with the acquisition, financing, ownership, operation and disposal of real estate.

IMPORTANT INFORMATION

This material is provided for educational purposes only and is not intended to be relied upon as a forecast, research or investment advice, and is not a recommendation, offer or solicitation to buy or sell any securities or to adopt any investment strategy. The opinions expressed are subject to change. References to specific securities, asset classes and financial markets are for illustrative purposes only and are not intended to be and should not be interpreted as recommendations. Reliance upon information in this material is at the sole risk and discretion of the reader. The material was prepared without regard to specific objectives, financial situation or needs of any investor.

This material may contain "forward-looking" information that is not purely historical in nature. Such information may include, among other things, projections, forecasts, and estimates of yields or returns.

No representation is made that any performance presented will be achieved by any BlackRock Funds, or that every assumption made in achieving, calculating or presenting either the forward-looking information or any historical performance information herein has been considered or stated in preparing this material. Any changes to assumptions that may have been made in preparing this material could have a material impact on the investment returns that are presented herein. Past performance is not a reliable indicator of current or future results and should not be the sole factor of consideration when selecting a product or strategy.

Diversification does not guarantee investment returns and does not eliminate the risk of loss.

The information and opinions contained in this material are derived from proprietary and non-proprietary sources deemed by BlackRock to be reliable, are not necessarily all-inclusive and are not guaranteed as to accuracy.

In the U.S., this material is for Institutional use only – not for public distribution.

In Canada, this material is intended for permitted clients as defined under Canadian securities law, is for educational purposes only, does not constitute investment advice and should not be construed as a solicitation or offering of units of any fund or other security in any jurisdiction.

For investors in the Caribbean, any funds mentioned or inferred in this material have not been registered under the provisions of the Investment Funds Act of 2003 of the Bahamas, nor have they been registered with the securities regulators of Bermuda, Dominica, the Cayman Islands, the British Virgin Islands, Grenada, Trinidad & Tobago or any jurisdiction in the Organisation of Eastern Caribbean States, and thus, may not be publicly offered in any such jurisdiction. The shares of any fund mentioned herein may only be marketed in Bermuda by or on behalf of the fund or fund manager only in compliance with the provision of the Investment Business Act 2003 of Bermuda and the Companies Act of 1981. Engaging in marketing, offering or selling any fund from within the Cayman Islands to persons or entities in the Cayman Islands may be deemed carrying on business in the Cayman Islands. As a non-Cayman Islands person, BlackRock may not carry on or engage in any trade or business unless it properly registers and obtains a license for such activities in accordance with the applicable Cayman Islands law.

In Latin America, for institutional investors and financial intermediaries only (not for public distribution). This material is for educational purposes only and does not constitute investment advice or an offer or solicitation to sell or a solicitation of an offer to buy any shares of any fund or security and it is your responsibility to inform yourself of, and to observe, all applicable laws and regulations of your relevant jurisdiction. If any funds are mentioned or inferred in this material, such funds may not been registered with the securities regulators of Argentina, Chile, Colombia, Mexico, Panama, Peru, Uruguay or any other securities regulator in any Latin American country and thus, may not be publicly offered in any such countries. The securities regulators of any country within Latin America have not confirmed the accuracy of any information contained herein. No information discussed herein can be provided to the general public in Latin America. The contents of this material are strictly confidential and must not be passed to any third party.

IN MEXICO, for institutional and qualified investors use only. Investing involves risk, including possible loss of principal. This material is provided for educational and informational purposes only and does now constitute an offer or solicitation of an offer to buy an shares of any fund or security.

This information does not consider the investment objectives, risk tolerance or the financial circumstances of any specific investor. This information does not replace the obligation of financial advisor to apply his/her best judgment in making investment decisions or investment recommendations. It is your responsibility to inform yourself of, and to observe, all applicable laws and regulations of Mexico. If any funds, securities or investment strategies are mentioned or inferred in this material, such funds, securities or strategies have not been registered with the Mexican National Banking and Securities Commission (Comisión Nacional Bancaria y de Valores, the "CNBV") and thus, may not be publicly offered in Mexico. The CNBV has not confirmed the accuracy of any information contained herein. The provision of investment management and investment advisory services ("Investment Services") is a regulated activity in Mexico, subject to strict rules, and performed under the supervision of the CNBV.

The materials that may be shared in this forum are for information purposes only, do not constitute investment advice, and are being shared in the understanding that the addressee is an Institutional or Qualified investor as defined under Mexican Law. BlackRock México Operadora, S.A. de C.V., Sociedad Operadora de Fondos de Inversión ("BlackRock México Operadora") is a Mexican subsidiary of BlackRock, Inc., authorized by the CNBV as a Mutual Fund Manager (Operadora de Fondos), and as such, authorized to manage Mexican mutual funds, ETFs and provide Investment Advisory Services.

For more information on the Investment Services offered by BlackRock Mexico, please review our Investment Services Guide available in **www.blackrock.com/mx**. This material represents an assessment at a specific time and its information should not be relied upon by the you as research or investment advice regarding the funds, any security or investment strategy in particular. Reliance upon information in this material is at your sole discretion. BlackRock México is not authorized to receive deposits, carry out intermediation activities, or act as a broker dealer, or bank in Mexico.

For more information on BlackRock México, please visit: **www.BlackRock.com/mx**. BlackRock receives revenue in the form of advisory fees for our advisory services and management fees for our mutual funds, exchange traded funds and collective investment trusts. Any modification, change, distribution or inadequate use of information of this document is not responsibility of BlackRock or any of its affiliates. Pursuant to the Mexican Data Privacy Law (Ley Federal de Protección de Datos Personales en Posesión de Particulares), to register your personal data you must confirm that you have read and understood the Privacy Notice of BlackRock México Operadora.

For the full disclosure, please visit www.BlackRock.com/mx and accept that your personal information will be managed according with the terms and conditions set forth therein.

For investors in Central America, these securities have not been registered before the Securities Superintendence of the Republic of Panama, nor did the offer, sale or their trading procedures. The registration exemption has made according to numeral 3 of Article 129 of the Consolidated Text containing of the Decree-Law No. 1 of July 8, 1999 (institutional investors). Consequently, the tax treatment set forth in Articles 334 to 336 of the Unified Text containing Decree-Law No. 1 of July 8, 1999, does not apply to them.

These securities are not under the supervision of the Securities Superintendence of the Republic of Panama. The information contained herein does not describe any product that is supervised or regulated by the National Banking and Insurance Commission (CNBS) in Honduras. Therefore any investment described herein is done at the investor's own risk.

This is an individual and private offer which is made in Costa Rica upon reliance on an exemption from registration before the General Superintendence of Securities ("SUGEVAL"), pursuant to articles 7 and 8 of the Regulations on the Public Offering of Securities ("Reglamento sobre Oferta Pública de Valores"). This information is confidential, and is not to be reproduced or distributed to third parties as this is NOT a public offering of securities in Costa Rica. The product being offered is not intended for the Costa Rican public or market and neither is registered or will be registered before the SUGEVAL, nor can be traded in the secondary market.

If any recipient of this documentation receives this document in El Salvador, such recipient acknowledges that the same has been delivered upon his request and instructions, and on a private placement basis.

In Argentina, only for use with Qualified Investors under the definition as set by the Comisión Nacional de Valores (CNV).

In Chile, the sale of each fund not registered with the CMF began on the date as indicated for such fund as described herein and the sale of such securities is subject to General Rule No. 336 issued by the SVS (now the CMF). The subject matter of this sale may include securities not registered with the CMF; therefore, such securities are not subject to the supervision of the CMF. Since the securities are not registered in Chile, there is no obligation of the issuer to make publicly available information about the securities in Chile. The securities shall not be subject to public offering in Chile unless registered with the relevant registry of the CMF.

In Peru, this private offer does not constitute a public offer, and is not registered with the Securities Market Public Registry of the Peruvian Securities Market Commission, for use only with institutional investors as such term is defined by the Superintendencia de Banca, Seguros y AFP.

In Uruguay, the Securities are not and will not be registered with the Central Bank of Uruguay. The Securities are not and will not be offered publicly in or from Uruguay and are not and will not be traded on any Uruguayan stock exchange. This offer has not been and will not be announced to the public and offering materials will not be made available to the general public except in circumstances which do not constitute a public offering of securities in Uruguay, in compliance with the requirements of the Uruguayan Securities Market Law (Law Nº 18.627 and Decree 322/011).

In the EEA and UK, this material is for distribution to Professional Clients (as defined by the Financial Conduct Authority or MiFID Rules) only and should not be relied upon by any other persons.

In the UK and Non-European Economic Area (EEA) countries, this is Issued by BlackRock Investment Management (UK) Limited, authorised and regulated by the Financial Conduct Authority. Registered office: 12 Throgmorton Avenue, London, EC2N 2DL. Tel: + 44 (0)20 7743 3000. Registered in England and Wales No. 02020394. For your protection telephone calls are usually recorded. Please refer to the Financial Conduct Authority website for a list of authorised activities conducted by BlackRock.

In the European Economic Area (EEA), this is Issued by BlackRock (Netherlands) B.V. is authorised and regulated by the Netherlands Authority for the Financial Markets. Registered office Amstelplein 1, 1096 HA, Amsterdam, Tel: 020 – 549 5200, Tel: 31-20-549-5200. Trade Register No. 17068311 For your protection telephone calls are usually recorded. For information on investor rights and how to raise complaints please go to https://www.blackrock.com/corporate/compliance/investor-right available in Italian.

For Qualified Investors in Switzerland: For Qualified Investors only. This document is marketing material.

This document shall be exclusively made available to, and directed at, qualified investors as defined in Article 10 (3) of the CISA of 23 June 2006, as amended, at the exclusion of qualified investors with an opting-out pursuant to Art. 5 (1) of the Swiss Federal Act on Financial Services ("FinSA").

For information on art. 8 / 9 Financial Services Act (FinSA) and on your client segmentation under art. 4 FinSA, please see the following website: **www.blackrock.com/finsa**.

In Swiss for use with per se professional client. In Israel- For Qualified Investors/Qualified Clients- where the client has attested via a letter of confirmation. In the DIFC for use with professional client under the DIFC COB rules.

In Saudi Arabia, Bahrain, Dubai (DIFC), Kuwait, Oman, Qatar and UAE, the information contained in this document, does not constitute and should not be construed as an offer of, invitation or proposal to make an offer for, recommendation to apply for or an opinion or guidance on a financial product, service and/or strategy. Whilst great care has been taken to ensure that the information contained in this document is accurate, no responsibility can be accepted for any errors, mistakes or omissions or for any action taken in reliance thereon. You may only reproduce, circulate and use this document (or any part of it) with the consent of BlackRock.

The information contained in this document is for information purposes only. It is not intended for and should not be distributed to, or relied upon by, members of the public.

The information contained in this document, may contain statements that are not purely historical in nature but are "forward-looking statements". These include, amongst other things, projections, forecasts or estimates of income. These forward-looking statements are based upon certain assumptions, some of which are described in other relevant documents or materials. If you do not understand the contents of this document, you should consult an authorised financial adviser.

Saudi Arabia: The information contained in this document is intended strictly for sophisticated institutions.

Bahrain: The information contained in this document is intended strictly for sophisticated institutions.

Dubai (DIFC): Blackrock Advisors (UK) Limited -Dubai Branch is a DIFC Foreign Recognised Company registered with the DIFC Registrar of Companies (DIFC Registered Number 546), with its office at Unit L15 - 01A, ICD Brookfield Place, Dubai International Financial Centre, PO Box 506661, Dubai, UAE, and is regulated by the DFSA to engage in the regulated activities of 'Advising on Financial Products' and

‘Arranging Deals in Investments’ in or from the DIFC, both of which are limited to units in a collective investment fund (DFSA Reference Number F000738).

The information contained in this document is intended strictly for Professional Clients as defined under the Dubai Financial Services Authority (“DFSA”) Conduct of Business (COB) Rules.

Kuwait: The information contained in this document is intended strictly for sophisticated institutions that are ‘Professional Clients’ as defined under the Kuwait Capital Markets Law and its Executive Bylaws.
Oman: The information contained in this document is intended strictly for sophisticated institutions.
Qatar: The information contained in this document is intended strictly for sophisticated institutions.
UAE: The information contained in this document is intended strictly for non-natural Qualified Investors as defined in the UAE Securities and Commodities Authority’s Board Decision No. 3/R.M of 2017 concerning Promoting and Introducing Regulations.

For investors in Israel: BlackRock Investment Management (UK) Limited is not licenced under Israel's Regulation of Investment Advice, Investment Marketing and Portfolio Management Law, 5755-1995 (the “Advice Law”), nor does it carry insurance thereunder.

In South Africa, please be advised that BlackRock Investment Management (UK) Limited is an authorised Financial Services provider with the South African Financial Services Conduct Authority, FSP No. 43288.

Any research in this document has been procured and may have been acted on by BlackRock for its own purpose. The results of such research are being made available only incidentally. The views expressed do not constitute investment or any other advice and are subject to change. They do not necessarily reflect the views of any company in the BlackRock Group or any part thereof and no assurances are made as to their accuracy.

This document is for information purposes only and does not constitute an offer or invitation to anyone to invest in any BlackRock funds and has not been prepared in connection with any such offer.

In Singapore, this document is provided by BlackRock (Singapore) Limited (company registration number:200010143N） for use only with institutional investors as defined in Section 4A of the Securities and Futures Act, Chapter 289 of Singapore. This advertisement or publication has not been reviewed by the Monetary Authority of Singapore.

In Hong Kong, this material is issued by BlackRock Asset Management North Asia Limited and has not been reviewed by the Securities and Futures Commission of Hong Kong. This material is for distribution to "Professional Investors" (as defined in the Securities and Futures Ordinance (Cap.571 of the laws of Hong Kong) and any rules made under that ordinance.) and should not be relied upon by any other persons or redistributed to retail clients in Hong Kong.

In South Korea, this information is issued by BlackRock Investment (Korea) Limited. This material is for distribution to the Qualified Professional Investors (as defined in the Financial Investment Services and Capital Market Act and its sub-regulations) and for information or educational purposes only and does not constitute investment advice or an offer or solicitation to purchase or sells in any securities or any investment strategies.

In Taiwan, independently operated by BlackRock Investment Management (Taiwan) Limited. Address: 28F., No. 100, Songren Rd., Xinyi Dist., Taipei City 110, Taiwan. Tel: (02)23261600.

In Australia and New Zealand, [MM3] issued by BlackRock Investment Management (Australia) Limited ABN 13 006 165 975, AFSL 230 523 (BIMAL) for the exclusive use of the recipient, who warrants by receipt of this material that they are a wholesale client as defined under the Australian Corporations Act 2001 (Cth) and the New Zealand Financial Advisers Act 2008 respectively.

This material provides general information only and does not take into account your individual objectives, financial situation, needs or circumstances. Before making any investment decision, you should therefore assess whether the material is appropriate for you and obtain financial advice tailored to you having regard to your individual objectives, financial situation, needs and circumstances. Refer to BIMAL’s Financial Services Guide on its website for more information. This material is not a financial product recommendation or an offer or solicitation with respect to the purchase or sale of any financial product in any jurisdiction.

This material is not intended for distribution to, or use by, any person or entity in any jurisdiction or country where such distribution or use would be contrary to local law or regulation. BIMAL is a part of the global BlackRock Group which comprises of financial product issuers and investment managers around the world. BIMAL is the issuer of financial products and acts as an investment manager in Australia. BIMAL does not offer financial products to persons in New Zealand who are retail investors (as that term is defined in the Financial Markets Conduct Act 2013 (FMCA)). This material does not constitute or relate to such an offer. To the extent that this material does constitute or relate to such an offer of financial products, the offer is only made to, and capable of acceptance by, persons in New Zealand who are wholesale investors (as that term is defined in the FMCA).

BIMAL, its officers, employees and agents believe that the information in this material and the sources on which it is based (which may be sourced from third parties) are correct as at the date of publication. While every care has been taken in the preparation of this material, no warranty of accuracy or reliability is given and no responsibility for the information is accepted by BIMAL, its officers, employees or agents. Except where contrary to law, BIMAL excludes all liability for this information.

In China, this material may not be distributed to individuals resident in the People's Republic of China ("PRC", for such purposes, not applicable to Hong Kong, Macau and Taiwan) or entities registered in the PRC unless such parties have received all the required PRC government approvals to participate in any investment or receive any investment advisory or investment management services.

For Southeast Asia: This document is issued by BlackRock and is intended for the exclusive use of any recipient who warrants, by receipt of this material, that such recipient is an institutional investors or professional/sophisticated/qualified/ accredited/expert investor as such term may apply under the relevant legislations in Southeast Asia (for such purposes, includes only Malaysia, the Philippines, Thailand, Indonesia and Brunei). BlackRock does not hold any regulatory licenses or registrations in Southeast Asia countries listed above, and is therefore not licensed to conduct any regulated business activity under the relevant laws and regulations as they apply to any entity intending to carry on business in Southeast Asia, nor does BlackRock purport to carry on, any regulated activity in any country in Southeast Asia. BlackRock funds, and/or services shall not be offered or sold to any person in any jurisdiction in which such an offer, solicitation, purchase, or sale would be deemed unlawful under the securities laws or any other relevant laws of such jurisdiction(s).

This material is provided to the recipient on a strictly confidential basis and is intended for informational or educational purposes only. Nothing in this document, directly or indirectly, represents to you that BlackRock will provide, or is providing BlackRock products or services to the recipient, or is making available, inviting, or offering for subscription or purchase, or invitation to subscribe for or purchase, or sale, of any BlackRock fund, or interests therein. This material neither constitutes an offer to enter into an investment agreement with the recipient of this document, nor is it an invitation to respond to it by making an offer to enter into an investment agreement.

The distribution of the information contained herein may be restricted by law and any person who accesses it is required to comply with any such restrictions. By reading this information you confirm that you are aware of the laws in your own jurisdiction regarding the provision and sale of funds and related financial services or products, and you warrant and represent that you will not pass on or utilize the information contained herein in a manner that could constitute a breach of such laws by BlackRock, its affiliates or any other person.

In Japan, this is issued by BlackRock Japan. Co., Ltd. (Financial Instruments Business Operator: The Kanto Regional Financial Bureau. License No375, Association Memberships: Japan Investment Advisers Association, The Investment Trusts Association, Japan, Japan Securities Dealers Association, Type II Financial Instruments Firms Association.) for Professional Investors only (Professional Investor is defined in Financial Instruments and Exchange Act).

For Other Countries in APAC: This material is provided for your informational purposes only and must not be distributed to any other persons or redistributed. This material is issued for Institutional Investors only (or professional/sophisticated/qualified investors as such term may apply in local jurisdictions) and does not constitute investment advice or an offer or solicitation to purchase or sell in any securities, BlackRock funds or any investment strategy nor shall any securities be offered or sold to any person in any jurisdiction in which an offer, solicitation, purchase or sale would be unlawful under the securities laws of such jurisdiction.

The information provided here is neither tax nor legal advice. Investors should speak to their tax professional for specific information regarding their tax situation. Investment involves including possible loss of principal. International investing involves risks, including risks related to foreign currency, limited liquidity, less government regulation, and the possibility of substantial volatility due to adverse political, economic or other developments. These risks are often heightened for investments in emerging/developing markets or smaller capital markets.

FOR PROFESSIONAL, INSTITUTIONAL, WHOLESALE AND QUALIFIED INVESTORS/PROFESSIONAL, QUALIFIED AND PERMITTED CLIENT USE ONLY

ALTH0923U/M-3105529-13/13