



FMR INVESTMENT MANAGEMENT (UK) LIMITED

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This brochure provides information about the qualifications and business practices of FMR Investment Management (UK) Limited ("FMR UK"). Throughout this brochure and related materials, FMR UK may refer to itself as a "registered investment adviser" or "being registered." These statements do not in any way imply a certain level of skill or training. If you have any questions about the contents of this brochure, please contact us at 617-563-7000. The information in this brochure has not been approved or verified by the United States Securities and Exchange Commission ("SEC") or by any state securities authority. Additional information about FMR UK also is available on the SEC's website at www.adviserinfo.sec.gov.

2. Material Changes

What follows is a discussion only of the material changes made since the annual update of this brochure was filed on March 28, 2023.

- The disclosure regarding fees and compensation for our mutual funds was updated to reflect changes to the fee structure for certain mutual funds.
- The "Voting Client Securities" section was updated to reflect the adoption of sustainable proxy voting guidelines to be used for certain shareholder proposals by select Fidelity sustainable funds.

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4. Advisory Business

FMR Investment Management (UK) Limited ("FMR UK") is authorized by the U.K. Financial Conduct Authority to provide, among other things, investment advisory, asset management, dealing and insurance intermediation services. FMR UK provides investment advisory and portfolio management services as a sub-adviser to certain of Fidelity Management & Research Company LLC's ("FMR") clients, including investment companies in the Fidelity family of mutual funds (the "Fidelity Funds" or "Fidelity group of funds"). FMR UK may provide portfolio management services as an adviser or sub-adviser to clients of other affiliated and unaffiliated advisers. FMR UK, a subsidiary of Fidelity Management & Research Company LLC, which itself is a wholly-owned subsidiary of FMR LLC, succeeded to the business of Fidelity Management & Research (U.K.) Inc. ("FMR (U.K.) Inc.") in 2015, including FMR (U.K.) Inc.'s registration with the Securities and Exchange Commission ("SEC"). FMR (U.K.) Inc. had been registered with the SEC since 1987. FMR UK may also provide other services to affiliated or unaffiliated parties that may require licensing in the local jurisdiction.

FMR UK provides investment supervisory services, including sub-advisory services, to institutional accounts, principally investment companies (also referred to as "mutual funds") registered under the Investment Company Act of 1940 (the "1940 Act"). FMR UK may provide to certain investment company and other institutional clients of FMR or its affiliates research, investment advisory, and/or discretionary asset management services principally relating to securities of issuers located outside of North America, including in the United Kingdom and elsewhere in Europe. FMR UK or its affiliates provide all necessary office facilities and personnel for servicing the funds' investments, and pays the salaries and fees of all officers of the funds, members of the Boards of Trustees who are "interested persons" of the funds, FMR UK or its affiliates, and all personnel of the funds, FMR UK, or its affiliates who perform services relating to research, statistical and investment activities. Though FMR UK advises the mutual funds and other institutional accounts it manages regarding certain commodity interests, FMR UK is not registered as a commodity pool operator or commodity trading adviser. Certain employees of FMR UK may provide services or products other than investment advisory services or products to or on behalf of affiliated or unaffiliated companies.

As part of its non-discretionary advisory services, FMR UK or its affiliates provide investment research services, which may include written research notes and ratings and portfolio modeling services. FMR UK or its affiliates may provide this research to other affiliates and unaffiliated investment managers and financial institutions, in some instances on a delayed basis. In addition, FMR UK or its affiliates, subject to the supervision of the Board of Trustees of each fund in the Fidelity group of funds, provide the management and administrative services necessary for the operation of the Fidelity group of funds. These services include: providing facilities for maintaining each fund's organization; supervising relations with custodians, transfer and pricing agents, accountants, underwriters and other persons dealing with the funds; at the direction of the funds, preparing all general shareholder communications and conducting shareholder relations; at the direction of the funds, maintaining each fund's records and the registration and notice filing status of each fund's shares under federal and state law, respectively; developing management and shareholder services for each fund; and furnishing reports, evaluations and analyses on a variety of subjects to the Board of Trustees of each fund in the Fidelity group of funds.

In certain instances, FMR UK or its affiliates, to the extent permitted by its advisory contracts, delegates investment discretion over all or a portion of the portfolio to one or more sub-advisers, including FMR UK's affiliates and various subsidiaries and affiliates of FIL Limited ("FIL"). If FMR UK or its affiliates engage FIL or another unaffiliated entity to sub-advise an FMR UK fund or account, or a portion of an FMR UK fund or account, the sub-adviser's policies and procedures, including trade allocation and conflicts of interest, will apply to that fund or account, except for certain fund Board-approved affiliated transaction policies subject to applicable law. FMR UK has access to investment research on a substantially delayed basis from various subsidiaries and affiliates of FIL, which are investment advisers registered with the SEC operating principally in the United Kingdom, Japan and Hong Kong, or Participating Affiliates (as defined below) of such registered advisors. Certain of FIL's subsidiaries and affiliates (including Fidelity Investments Canada ULC ("FIC")), which are companies not registered with the SEC (each, a "Participating Affiliate"), have access to information (such as through employees who

work for both a FIL registered adviser and the unregistered FIL subsidiary or affiliate) concerning securities recommendations for the registered adviser's U.S. clients. Additionally, each of FMR LLC, the ultimate parent company of FMR UK, and FIL Limited have contracted on an arms-length basis for the provision of compliance monitoring and reporting services in their respective jurisdictions. As such, certain individuals supporting compliance and operations functions will have access to information concerning securities recommendations for each others' clients. Subsidiaries of FIL Limited also distribute investment strategies advised by FMR UK and its affiliates outside of the U.S. FMR UK disclaims that it is a related person of FIL.

In the course of FMR UK's providing its investment advisory services, a portfolio manager, analyst or other employee of FMR UK or its affiliates will, from time to time, express views regarding a particular company, security, industry or market sector. The views expressed by any such person are the views of only that individual as of the time expressed and do not necessarily represent the views of FMR UK or its affiliates or any other person in the Fidelity organization. Any such views are subject to change at any time based upon market or other conditions and FMR UK disclaims any responsibility to update such views. These views may not be relied on as investment advice and, because investment decisions for an account managed by FMR UK or its affiliates are based on numerous factors, may not be relied on as an indication of trading intent on behalf of any such account.

FMR UK or its affiliates generally have authority to determine which securities to purchase or sell and the total amount of such purchases and sales. However, with respect to each discretionary account, FMR UK's and its affiliates' authority is subject to certain limitations, including the applicable investment objectives, policies and restrictions. These limitations are based on a variety of factors, including regulatory constraints and policies formally imposed by a client or its governing body (e.g., Board of Trustees) through, for example, a management agreement. With respect to FMR UK's registered investment company clients, many of the applicable investment policies and limitations are set forth in each client's registration statement filed with the SEC.

As of December 31, 2023, FMR UK managed \$14,663,159,397 of client assets on a discretionary basis. As of December 31, 2023, FMR UK did not manage any client assets on a non-discretionary basis.

5. Fees and Compensation

Unified Fee	+	Individual Fund Fee	+/-	Performance Adjustment (if any)	=	Managemen t Fee
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FMR UK's mutual fund clients pay FMR UK or its affiliates a management fee that covers varying services depending on the fee structure. These structures include: (i) a fluctuating class-level all-inclusive fee rate (with certain exceptions), with or without a performance fee adjustment or income component; (ii) a fixed class-level all-inclusive fee rate (with certain exceptions); and (iii) a flat fee rate that excludes class-level expenses.

For certain equity funds that have performance adjustments, the performance adjustment rate is calculated monthly by comparing the fund's performance relative to a benchmark over a 36-month performance period. The maximum annualized performance adjustment rate is generally $\pm 0.20\%$ of the average net assets over the performance period. The performance adjustment rate is divided by twelve and multiplied by the fund's average net assets over the performance period, and the resulting dollar amount is then added to or subtracted from a basic fee.

On behalf of certain of FMR's mutual funds, FMR has entered into sub-advisory agreements with certain affiliated and unaffiliated investment advisers. Pursuant to the sub-advisory agreements, FMR, and not the funds, pays each investment adviser. FMR does not charge a management fee for providing investment advisory services to certain mutual funds that serve as underlying investment options to other mutual funds or accounts managed by FMR or other affiliated investment advisers.

The specific rate charged to any particular fund varies based on the application of the management fee arrangement and performance adjustment fee, if any. The fee applicable to any fund, along with its fee schedule, is disclosed in that fund's registration statement or offering document.

FMR UK or its affiliates do not receive a management fee for investment advisory services provided to certain funds available through fee-based programs offered by FMR UK's affiliates and are instead compensated for their services out of such fees.

FMR UK may provide non-discretionary advisory services, primarily in the form of research services, to other affiliated and unaffiliated investment managers or financial institutions, in some instances on a delayed basis. With respect to such services, fees are negotiable, paid in arrears, and generally relate to the amount of assets benefiting from the research or other advisory services. If non-discretionary investment advice and research services are provided on behalf of FMR or its affiliates, FMR UK generally will receive from FMR or its affiliates a sum equal to 110% of all costs and expenses, exclusive of taxes imposed on income, incurred by FMR UK in the performance of its investment advisory services.

In the case of investment companies registered under the 1940 Act, both the advisory contract with the fund's adviser and the sub-advisory agreement between FMR UK and the adviser, if applicable, are subject to approval by the Board of Trustees, including trustees who are not interested persons (as defined in the 1940 Act) ("Independent Trustees"), of each mutual fund. When serving as a sub-adviser to investment companies managed by FMR, FMR UK's fee schedule shall in all circumstances be an amount not less than 110% of FMR UK's costs and expenses, exclusive of taxes imposed on income, incurred in rendering such services (except that such fee shall not exceed FMR's or its affiliates' management fee during the relevant period). When serving as a sub-adviser to investment companies managed by affiliates other than FMR, FMR UK's basic fee schedule for discretionary mutual fund portfolio management generally consists of a percentage of the management fee (for example, 50%) payable by each portfolio to FMR UK.

Compensation to FMR UK or its affiliates is deducted from a registered investment company's assets and is payable on a monthly basis in arrears or on such other terms as FMR UK and/or its affiliates and the particular client may from time to time agree. When FMR UK is serving as a sub-adviser to investment companies managed by FMR, FMR pays FMR UK. Any investment advisory agreement concerning a registered investment company will terminate within two years of the effective date of the investment advisory agreement unless renewed by the investment company in a manner permitted by Section 15 of the 1940 Act. Any such agreement shall also terminate upon assignment or upon sixty (60) days' advance written notice by any party to the agreement or by the investment company concerned.

For FMR UK clients that are not registered investment companies, compensation to FMR UK is deducted from that client's assets in arrears generally on a monthly basis or at such other time as agreed between FMR UK and/or its affiliates and the particular client. When FMR UK is serving as a sub-adviser to clients that are not registered investment companies, the adviser to those clients pays FMR UK. FMR UK and/or its affiliates and the particular client may also agree to other terms of compensation from time to time.

FMR UK or its affiliates have, from time to time, voluntarily or contractually agreed to reimburse certain mutual fund clients for management fees and other expenses above a specified limit. FMR UK or its affiliates retain the ability to be repaid by such clients if expenses fall below the specified limit prior to the end of the client fiscal year. Reimbursement arrangements can decrease a fund's expenses and enhance its performance. Voluntary reimbursement arrangements may be discontinued by FMR UK or its affiliates at any time.

In addition to any management fee payable to FMR UK, and the costs associated with securities lending, as applicable, most funds in the Fidelity group of funds or classes thereof, as applicable, pay all fund expenses that are not assumed by those parties. Most funds pay for the typesetting, printing, and mailing of their proxy materials to shareholders, legal expenses, and the fees of the custodian, auditor, and Independent Trustees. Other expenses paid by a fund generally include interest, taxes, brokerage

commissions, the fund's proportionate share of insurance premiums and Investment Company Institute dues, and the costs of registering shares under federal securities laws and making necessary filings under state securities laws. A fund is also liable for such non-recurring expenses as may arise, including costs of any litigation to which the fund is a party, and any obligation it has to indemnify its officers and Trustees with respect to litigation. For information regarding FMR UK's and its affiliates' brokerage arrangements, see "Brokerage Practices" section herein.

6. Performance-Based Fees and Side-By-Side Management

The management of multiple funds and accounts (including proprietary accounts of FMR UK or one or more of its affiliates) gives rise to conflicts of interest when the funds and accounts have different objectives, benchmarks, time horizons, and fees as the portfolio manager must allocate his or her time and investment ideas across multiple funds and accounts. Investment personnel are mindful of potentially conflicting interests of our clients and take appropriate measures to ensure that the interests of all clients are taken into consideration. As described in "Fees and Compensation" section herein, certain equity funds in the Fidelity group of funds have management fees that include a performance adjustment component. Where a portfolio manager manages multiple funds and accounts, and some of those funds and accounts include performance-adjusted fees and others do not, an economic incentive exists for the portfolio manager to favor those funds and accounts that include a performance-adjusted component.

Conflicts of interest also arise when fund or account orders do not get fully executed due to being aggregated with those of other funds or accounts managed by FMR UK or an affiliate. Portfolio orders for another fund or account, when executed, may adversely impact the value of securities held by a fund. For example, short sales in one fund or account may have an adverse impact on the value of the shorted security held or traded by other funds or accounts. Although FMR UK or its affiliates monitor such transactions to attempt to ensure equitable treatment of both the fund or account and a fund or account that engages in short sales in the same or a similar security, there can be no assurance that the price of a security held by the fund or account is not impacted as a result. Also, securities selected for a particular fund or account may outperform the securities selected for other funds or accounts managed by the same portfolio manager. Portfolio managers are permitted to invest in the funds or accounts they manage even when, under certain circumstances, a fund or account is closed to new investors.

FMR UK also manages certain proprietary accounts or "pilot funds," which are used to develop investment ideas, strategies and management experience. These pilot funds or accounts are in some instances similar to other funds or accounts currently managed by FMR UK and trade in the same securities FMR UK trades for other discretionary clients. FMR UK has oversight in place to ensure that trading and allocations for these funds and accounts are not favored over accounts managed for discretionary clients. For more information regarding trade allocation procedures, see "Trade Allocation Policies" in the "Brokerage Practices" section herein.

FMR UK's use of multiple investment strategies presents additional conflicts. For example, a conflict of interest situation is presented when Fidelity's client accounts may invest in securities or purchase a loan relating to different parts of the capital structure of a single issuer. In some cases, Fidelity may exercise rights, provide additional capital, or approve or disapprove of certain corporate actions for certain client accounts with respect to an issuer, or refrain from taking any such action or decision and such actions or decisions may adversely impact the value or rights of securities or loans held by other client accounts.

For example, if a client account holds loans, securities, or other positions in the capital structure of an issuer that ranks senior in preference to the holdings of other client accounts in the same issuer, and the issuer experiences financial or operational challenges, Fidelity, acting on behalf of the client account, may exercise its rights or provide additional capital in connection with a liquidation, reorganization, or restructuring of the issuer with terms that may have an adverse effect on or otherwise conflict with the interests of other client accounts. For example, in connection with any lending arrangements involving the issuer in which a client account participates, Fidelity, on behalf of certain client accounts, may seek to exercise rights under the applicable loan agreement or other document in a manner that may prove detrimental to positions held by other client accounts. Alternatively, in situations in which client accounts

hold a more senior position as compared to positions held by other client accounts in the capital structure of an issuer experiencing financial or other difficulties, Fidelity may determine not to pursue actions and remedies available to the client account or enforce particular terms that might be unfavorable to the other client accounts holding the less senior position so long as such determination does not adversely affect the funds holding such rights to take action. Additionally, Fidelity may negotiate for a new investment to rank senior to an existing investment or negotiate for other terms that are advantageous to the clients making the new investment but disadvantageous to clients that only hold the existing investment.

In addition, if client accounts hold voting securities of an issuer in which other client accounts hold loans, bonds, or other credit-related assets or securities, Fidelity may vote on certain matters in a manner that has an adverse effect on the positions held by other client accounts. Conversely, client accounts may hold voting securities of an issuer in which other client accounts hold credit-related assets or securities, and Fidelity may determine on behalf of the client accounts not to vote in a manner adverse to the other client accounts (including by abstaining from the relevant vote or voting in line with other *pari passu* investors in the same debt tranche) so long as such vote does not adversely affect the funds exercising such voting rights.

These potential issues are examples of conflicts of interest that Fidelity will face when client accounts invest in different parts of the capital structure of a single issuer. Fidelity addresses these issues based on the facts and circumstances of each situation. This may result in the creation of separate advisory groups to consult with and represent the client accounts having potentially conflicting interests. Each of these separate groups will pursue options in the best interests of the client accounts they support without taking into consideration the other group's positions.

As a result of the conflicts presented in the examples above, client accounts could sustain losses or lower investment returns during periods in which other client accounts achieve gains or higher investment returns generally or with respect to particular holdings in the same issuer than would have been the case had the conflicts described above not existed.

FMR UK has adopted policies and procedures and maintains a compliance program designed to help manage conflicts arising from side-by-side management, which include trade allocation policies approved by the Fidelity Funds' Boards of Trustees. These policies and procedures seek to ensure that trading for all funds and accounts is fair and equitable over time. There can be no assurance, however, that all conflicts have been addressed in all situations. For more information regarding conflicts of interests relating to the management of multiple funds and accounts, see "Code of Ethics, Participation or Interest in Client Transactions and Personal Trading" section herein.

7. Types of Clients

FMR UK, an indirect wholly-owned subsidiary of FMR, is a registered investment adviser. FMR's clients are generally mutual funds or other institutional accounts. FMR UK may provide research and may serve as sub-adviser with respect to equity, high income, money market and fixed income mutual funds, ETFs and institutional accounts, or portions of mutual funds and institutional accounts, managed by FMR or affiliated or unaffiliated advisers or other institutions. FMR UK provides research and serves as an adviser or sub-adviser to various accounts for which FMR UK affiliates have contracted to provide investment advisory services. These accounts include, among others; unit and investment trusts, collective investment trusts, and investment companies authorized in jurisdictions outside the United States. FMR UK is authorized to undertake investment business in the U.K.

FMR UK will generally accept only investment company clients or similar foreign mutual fund clients on a fully discretionary basis (subject to whatever limitations have been set forth by the client's or fund's investment objectives, policies and restrictions, and as may be imposed by law). Other accounts may be considered on a case-by-case basis and may be subject to a minimum asset amount.

8. Methods of Analysis, Investment Strategies and Risk of Loss

FMR UK uses a variety of methods of security analysis to select investments in managing client assets, including, as applicable: fundamental analysis (i.e., evaluating each issuer's financial condition, industry position, financially material sustainable investing factors, and the market and economic conditions impacting their profitability); quantitative analysis (i.e., mathematical and statistical modeling); technical analysis (i.e., statistical analysis of market activity); and cyclical analysis (i.e., evaluating issuers based in part on their sensitivity to business cycles). FMR UK also uses general macro-economic analysis as a component of its security analysis methods. In addition to relying on financial statement information, FMR UK also uses extensive in-person and/or remote corporate visits and interviews with issuer management teams in conducting research, offering statements of various municipalities as a source of information, information and analysis relating to foreign sovereigns and currency markets, third-party research, and alternative data.

FMR UK uses a wide variety of investment strategies in managing client assets according to client investment objectives, including, but not limited to, investing, as applicable, in:

- stocks and other public and private equity securities;
- bonds and other debt securities of all types and repurchase agreements for those securities; bank debt and loans;
- direct loans;
- real estate related investments of all types;
- derivatives, such as index futures, covered and uncovered options;
- interest rate, total return and credit default swaps, cleared and non-cleared swap transactions and swaptions, including interest rate, total return and credit default swaps, and equity-linked notes;
- futures transactions, currency spot and forward trading and other currency related derivatives;
- other affiliated and unaffiliated investment funds, including actively-managed and indexed equity, bond and money market funds and ETFs;
- FMR UK's or its affiliates' central funds (specialized investment vehicles used by Fidelity Funds to invest in particular security types or investment disciplines, or for cash management).

FMR UK invests in securities of companies engaged in a variety of economic sectors and industries that are domiciled in the U.S. and outside the U.S. (in developed, emerging and frontier markets); in stocks with growth or value characteristics; and in companies with market capitalizations of all sizes. FMR UK invests across different asset classes, market sectors, maturities, and regions. With respect to money market funds, FMR UK or its affiliates observes industry-standard regulatory requirements for money market funds for the quality, maturity, liquidity, and diversification of investments.

The value of securities selected using quantitative analysis can react differently to issuer, political, market, and economic developments than the market as a whole or securities selected using only fundamental analysis. The factors used in quantitative analysis and the weight placed on those factors may not be predictive of a security's value. In addition, factors that affect a security's value can change over time and these changes may not be reflected in the quantitative model.

For strategies that focus on investing in securities of issuers that FMR UK or its affiliates believes have proven or improving sustainability practices, FMR UK or its affiliates uses its proprietary sustainability ratings process to evaluate the current state of an issuer's practices across operational, human and natural capital using a data-driven framework that includes both proprietary and third-party data, and to provide a qualitative forward-looking assessment of an issuer's sustainability outlook provided by FMR UK or its affiliates' fundamental research analysts and sustainable investing team. FMR UK or its affiliates' sustainability ratings of issuers are derived from multiple factors, including an issuer's treatment of natural capital, which may include, but is not limited to, carbon and toxic emissions, water management, waste management, vulnerability to the physical impacts of climate change, and research and investment into products, services, and energies that reduce emissions and/or provide opportunities to achieve a low carbon transition. An assessment of an issuer's human capital profile includes, but is not limited to, its approach to diversity and inclusion, workforce and talent management, data privacy, product

safety, and human rights. With respect to operational capital, FMR UK or its affiliates considers the independence and diversity of an issuer's board, the issuer's compensation practices, and board oversight of critical sustainability issues. These factors are weighted based on how material FMR UK or its affiliates believes each factor is to an issuer's financial outlook, and not all factors may be applicable to all issuers. As part of its investment approach, FMR UK or its affiliates also applies criteria ("exclusion criteria") that seek to exclude issuers that are directly engaged in, and/or derive significant revenue from, certain industries or product lines. At present, these include: civilian semi-automatic firearms; tobacco production, or bonds issued against the proceeds of tobacco settlements; for-profit prisons; controversial weapons (e.g., cluster munitions, landmines, biological/chemical weapons, blinding lasers, and incendiary weapons); and coal production and/or mining. FMR UK or its affiliates may periodically update the exclusion criteria.

FMR UK uses a variety of trading approaches to implement its investment strategies, including cash trading on- and off- exchange, FX Forwards, covered short sales, margin transactions, and option writing, including covered options, uncovered options or spreading strategies. Margin may be required in connection with certain futures, FX forwards and options transactions or in connection with short sales. FMR UK does not engage in the purchase of securities on margin, except it may do so in connection with clearance and settlement of securities transactions. The extent to which any of these strategies is used on behalf of any one client is based on that client's investment objective, policies and restrictions.

In addition, FMR UK's affiliates engage in securities lending, on behalf of its clients, to parties such as broker-dealers or other institutions. FMR UK's affiliates have established policies for its clients reasonably designed to ensure that lending opportunities are apportioned appropriately among them over time. When supply/demand is insufficient to satisfy all eligible clients, lending opportunities are generally apportioned based on the client's security position size as a percentage of the client's net assets in that particular security.

The strategies presented above pose risks, and many factors affect each fund's or account's performance. The following risk factors are not a complete list of the risks involved in an investment in the strategies and products advised or managed by FMR UK. These risk factors include only those risks we believe to be material. With respect to FMR UK's underlying mutual fund, collective investment trust, limited partnership, ETF, separately managed accounts, and other institutional account clients, more detailed information relating to the methods and strategies and their associated risks are set forth in that fund's or account's prospectus and registration statement filed with the SEC or other applicable offering or account guideline documents. Strategies that pursue investments in equities will be subject to stock market volatility, and strategies that pursue fixed-income investments (such as bond or money market funds) will see values fluctuate in response to changes in interest rates. Developments that disrupt global economies and financial markets, such as war, acts of terrorism, economic sanctions, the spread of infectious illness or other public health issues, recessions or other events may magnify factors that affect performance. In addition, some countries experience low or negative interest rates, from time to time, which may magnify interest rate risk for the markets as a whole and for the funds or accounts. All strategies are ultimately affected by impacts to the individual issuers, such as changes in an issuer's profitability and credit quality, or changes in tax, regulatory, market or economic developments. A decline in the credit quality of an issuer can cause the price of a security to decrease.

Lower-quality debt securities (those of less than investment-grade quality, also referred to as high-yield debt securities or junk bonds) involve greater risk of default or price changes due to changes in the credit quality of the issuer. The value of lower-quality debt securities can be more volatile due to increased sensitivity to adverse issuer, political, regulatory, market, or economic developments. Non-diversified funds and accounts that invest in a smaller number of individual issuers can be more sensitive to these changes. Nearly all funds or accounts are subject to volatility in non-U.S. markets, either through direct exposure or indirect effects on U.S. markets from events abroad, including fluctuations in foreign currency exchange rates and, in the case of less-developed markets, currency illiquidity. Those funds and accounts with investments in emerging and frontier markets are potentially subject to heightened volatility from greater social, economic, regulatory, and political uncertainties, as the extent of economic development, political stability, market depth, infrastructure, capitalization, and regulatory oversight can

be less than in more developed markets. Trading, settlement, and custodial practices (including those involving securities settlement where fund or account assets are released prior to receipt of payment) in non-U.S. markets that are less developed than those in U.S. markets may result in increased investment or valuation risks, increased counterparty exposure, or substantial delays (including those arising from failed trades or the insolvency of, or breach of duty by, a broker-dealer, securities depository, sub-custodian, clearinghouse or other party). Additionally, funds or accounts that pursue debt investments are subject to risks of prepayment or default, as well as changes to bankruptcy or debtor relief laws, which may impede collection efforts or alter timing and amount of collections.

Funds or accounts that pursue strategies that concentrate in particular industries or are otherwise subject to particular segments of the market (e.g., money market funds' exposure to the financial services industry, municipal funds' exposure to the municipal bond market, or international, emerging markets or frontier markets funds' exposure to a particular country or region) are more significantly impacted by events affecting those industries or markets. The value of securities of issuers in the real estate industry can be affected by changes in real estate values and rental income, property taxes, interest rates, tax and regulatory requirements, overbuilding, extended vacancies of properties, and the issuer's management skill.

Strategies that lead funds or accounts to invest in other funds bear all the risks inherent in the underlying funds in which those funds invest, and strategies that pursue leverage risk, including investment in derivatives—such as swaps (interest rate, total return, and credit default) and futures contracts—and forward-settling securities, magnify market exposure and potential losses. Investing based on sustainability factors may cause a fund or account to forgo certain investment opportunities available to funds or accounts that do not use such criteria. Because of the subjective nature of sustainable investing, there can be no guarantee that criteria used by FMR UK or its affiliates in its sustainable strategies will reflect the beliefs or values of any particular fund or account. Additionally, FMR UK or its affiliates rely upon information and data obtained through third-party reporting, which, if incomplete or inaccurate, could result in FMR UK or its affiliates imprecisely evaluating an issuer's practices with respect to material sustainability factors. Additionally, funds and accounts are subject to operational risks, which can include risks of loss arising from failures in internal processes, people or systems, such as routine processing errors or major systems failures, or from external events, such as securities exchange outages.

Ultimately, a fund's or account's share price and/or net asset value changes daily based on changes in market conditions, foreign currency exchange rates and interest rates and in response to other economic, political, or financial developments. A fund's or account's reaction to these events will be affected by the types of securities in which the fund or account invests, the financial condition, industry and economic sector, and geographic location of an issuer; and the fund's or account's level of investment in the securities of that issuer. A fund's or account's investment in such securities involves risk of loss that clients of the fund or account would, and should, be prepared to bear. When a shareholder sells or redeems shares in the fund, the shares may be worth more or less than what the shareholder paid for them, which means that the shareholder could lose money by investing in the fund. Similarly, an account owner could lose money due to a decline in the account's net asset value.

Due to regulatory and issuer-specific limits that apply to the ownership of securities of certain issuers, FMR UK and its affiliates limit investments in the securities of such issuers. Similar limitations apply to futures and other derivatives, such as options. In addition, FMR UK and/or its affiliates from time-to-time determine that, because of regulatory requirements that apply to FMR UK and/or its affiliates in relation to investments in a particular country or in an issuer operating in a particular regulated industry, investments in the securities of issuers domiciled or listed on trading markets in that country or operating in that regulated industry above certain thresholds is impractical or undesirable. The foregoing limits and thresholds may apply at the account level or in the aggregate across all accounts (or certain subsets of accounts) managed, sponsored, or owned by, or otherwise attributable to, FMR UK and its affiliates. For investment risk management and other purposes, FMR UK and its affiliates also generally apply internal aggregate limits on the amount of a particular issuer's securities that are owned by all such accounts, although such limits may vary for certain accounts established to develop performance track records. In connection with the foregoing limits and thresholds, FMR UK limits or excludes clients' investment in

particular issuers, futures, derivatives and/or other instruments (or limits the exercise of voting or other rights) and investment flexibility may be restricted. In addition, to the extent that client accounts already own securities that directly or indirectly contribute to such an ownership threshold being exceeded, FMR UK sells securities held in such accounts to bring account- level and/or aggregate ownership below the relevant threshold. If any such sales result in realized losses for client accounts, those client accounts may bear such losses depending on the particular circumstances.

FMR UK and its affiliates establish internal limits, and are subject to external limits, on how much the funds and accounts they manage can invest in any one other fund. Additionally, regulatory restrictions limit the amount that one fund can invest in another, which means that FMR UK is limited in the amount it can cause a fund it manages to invest in any particular fund.

With the increased use of technologies to conduct business, FMR UK and its affiliates are susceptible to operational, information security and related risks. For example, computer, communications, data processing, networks, backup, business continuity or other operating, information or technology systems, including those outsourced to other providers, may fail to operate properly or become disabled, overloaded or damaged as a result of a number of factors. These factors could include events that are wholly or partially beyond our control and may have a negative effect on our ability to conduct business activities. We believe that we have taken reasonable steps to mitigate these risks, but do not believe that we can eliminate them altogether. In general, cyber incidents can result from deliberate attacks or unintentional events and may arise from external or internal sources. Cyber-attacks include, but are not limited to, gaining unauthorized access to digital systems (e.g., through “hacking” or malicious software coding) for purposes of misappropriating assets or sensitive information; corrupting data, equipment or systems; or causing operational disruption. Cyber-attacks may also be carried out in a manner that does not require gaining unauthorized access, such as causing denial-of-service attacks on websites (i.e., efforts to make network services unavailable to intended users). Cyber incidents affecting FMR UK, its affiliates, or any other service providers (including, but not limited to, accountants, custodians, transfer agents and financial intermediaries used by a fund or account) have the ability to cause disruptions and impact business operations, potentially resulting in financial losses, interference with the ability to calculate NAV, impediments to trading, the inability to transact business, destruction to equipment and systems, violations of applicable privacy and other laws, regulatory fines, penalties, reputational damage, reimbursement or other compensation costs, or additional compliance costs.

Similar adverse consequences could result from cyber incidents affecting issuers of securities in which a fund or account invests, counterparties with which a fund or account engages in transactions, governmental and other regulatory authorities, exchange and other financial market operators, banks, brokers, dealers, insurance companies and other financial institutions (including financial intermediaries and service providers) and other parties.

9. Disciplinary Information

There are no legal or disciplinary events that are material to the evaluation of FMR UK’s business or the integrity of its management.

10. Other Financial Industry Activities and Affiliations

Broker-Dealers

FMR UK or its affiliates have relationships or arrangements with the following broker-dealers:

Fidelity Distributors Company LLC (“FDC LLC”), a wholly-owned subsidiary of Fidelity Global Brokerage Group, Inc., is the principal underwriter and general distributor of shares in the Fidelity family of registered, open-end management investment companies and Fidelity exchange-traded funds. FDC LLC markets products such as mutual funds, ETFs, private funds, and commingled pools advised by FMR, its affiliates, or certain unaffiliated advisers to certain third-party financial intermediaries and institutional investors. On behalf of certain FDC LLC investment advisor affiliates, FDC LLC also solicits

intermediaries, institutions and governmental entities who are interested in purchasing investment advisory services directly or for their clients. FDC LLC is a registered broker-dealer under the Securities Exchange Act of 1934 ("Exchange Act").

Fidelity Brokerage Services LLC ("FBS"), a wholly-owned subsidiary of Fidelity Global Brokerage Group, Inc., is a registered broker-dealer under the Exchange Act, and provides brokerage products and services including the sale of shares of investment companies advised by FMR to individuals and institutions including retirement plans administered by affiliates. Pursuant to referral agreements and for compensation, representatives of FBS refer customers to various services offered by FBS's related persons. In addition, FBS is the distributor of insurance products, including variable annuities, which are issued by FMR UK's related persons, Fidelity Investments Life Insurance Company ("FIL") and Empire Fidelity Investments Life Insurance Company ("EFIL"). FBS provides shareholder services to certain of FMR UK's or FMR UK's affiliates' clients.

Fidelity Global Brokerage Group, Inc. ("FGBG"), a wholly owned subsidiary of FMR LLC, wholly owns six broker-dealers: Fidelity Brokerage Services LLC, National Financial Services LLC, Fidelity Distributors Company LLC, Fidelity Prime Financing LLC, Digital Brokerage Services LLC, and Green Pier Fintech LLC. FGBG and FMR Sakura Holdings, Inc., both wholly owned subsidiaries of FMR LLC, along with other third-party members, also have membership interests in Kezar Markets, LLC. Transactions for clients of FMR UK or other entities for which FMR UK serves as adviser or sub-adviser or provides discretionary trading services, as well as clients of FMR UK's affiliates, are executed through two alternative trading systems, the Level ATS and Luminex ATS, both operated by Kezar Trading, LLC, a wholly-owned subsidiary of Kezar Markets, LLC.

Digital Brokerage Services LLC ("DBS"), a wholly owned subsidiary of Fidelity Global Brokerage Group Inc., is a registered broker-dealer under the Exchange Act. DBS operates a primarily digital/mobile application- based brokerage platform, which enables retail investors to open brokerage accounts via the mobile application and purchase and sell equity securities, including shares of investment companies advised by FMR. DBS receives remuneration from FMR for expenses incurred in servicing and marketing FMR products.

National Financial Services LLC ("NFS") is a registered broker-dealer under the Exchange Act and is a fully disclosed clearing broker-dealer. As such, NFS provides clearing, settlement, and execution services for other broker-dealers, including its affiliate Fidelity Brokerage Services. Fidelity Capital Markets (FCM) is a division of NFS which provides trade executions for FMR UK and other advisory clients. Additionally, FCM operates CrossStream, an alternative trading system that allows orders submitted by its subscribers to be crossed against orders submitted by other subscribers. CrossStream is used to execute transactions for FMR UK or FMR UK's affiliates' investment company and other advisory clients. NFS provides transfer agent or sub transfer agent services and other custodial services to certain of FMR UK's or FMR UK's affiliates' clients. NFS also provides securities lending services to certain of FMR's or FMR's affiliates' clients. NFS is a wholly-owned subsidiary of Fidelity Global Brokerage Group Inc., a holding company that provides certain administrative services to NFS and other affiliates.

Kezar Trading, LLC, a registered broker-dealer and operator of alternative trading systems ("ATS"), operates the Luminex ATS and the Level ATS, which allow orders submitted by its subscribers to be crossed against orders submitted by other subscribers. Kezar Trading, LLC is a wholly owned subsidiary of Kezar Markets, LLC. FGBG and FMR Sakura Holdings, Inc., both wholly owned subsidiaries of FMR LLC, along with other third-party members, have membership interests in Kezar Markets, LLC. Kezar Trading, LLC charges a commission to both sides of each trade executed in the Luminex ATS and Level ATS. The Luminex ATS and Level ATS are used to execute transactions for FMR UK's or FMR UK's affiliates' investment company and other advisory clients. NFS serves as a clearing agent for transactions executed in the Luminex ATS and Level ATS.

FMR UK is authorized to place portfolio transactions with FCM and use CrossStream, an ATS operated by NFS, as well as Luminex ATS and Level ATS, which are operated by Kezar Trading, LLC, if it reasonably believes the quality of the transaction is comparable to what it would be with other qualified

broker-dealers. In addition, FMR UK places client trades with broker-dealers that use NFS or FCC as a clearing agent.

In all cases, transactions executed by affiliated brokers on behalf of registered investment company clients are effected in accordance with Rule 17e-1 under the 1940 Act, and procedures approved by the Trustees of FMR UK's or its affiliates' clients in the Fidelity group of funds.

FCM and Kezar Trading, LLC cross transactions on an agency basis between clients of FMR UK or its affiliates, including investment company clients, non-investment company clients, and other non-advisory clients (agency cross transactions), as permitted by applicable rules and regulations. Such transactions will be executed, to the extent required by law, in accordance with (i) Rule 206(3)-2 under the Advisers Act, requiring written consent, confirmations of transactions and annual reporting, and (ii) procedures adopted by the Board of Trustees of FMR UK's or FMR UK's affiliates' clients in the Fidelity group of funds pursuant to Rule 17e-1 under the 1940 Act.

Conflicts of interest that arise from dealings with affiliated brokers are governed by various policies adopted by the Fidelity Funds Boards of Trustees. For example, Section 10(f) of the 1940 Act is intended to prevent affiliated underwriters from "dumping" undesirable securities on funds or otherwise using fund purchases to benefit the underwriting syndicate. In accordance with Rule 10f-3, the Fidelity Funds Boards of Trustees have adopted procedures by which the funds are permitted to purchase securities in offerings for which FCM acts as a principal underwriter, provided that certain conditions are satisfied.

Additionally, Section 17(a) prevents affiliated brokers on their own behalf from selling securities to or buying securities from the funds, except to the extent allowed by law, to prevent those affiliated brokers from taking advantage of the funds. The Fidelity Funds Boards of Trustees have adopted policies and procedures preventing affiliated brokers from engaging in such transactions, except to the extent allowed by law. Furthermore, Section 17(e) prevents affiliated brokers from charging excessive fees for transactions on behalf of the funds. Under Rule 17e-1, affiliated brokers are permitted to receive a "usual and customary brokerage commission" in connection with transactions effected on a securities exchange, and the Rule 17e-1 procedures adopted by the Fidelity Funds Boards of Trustees ensure that the fees do not exceed the usual and customary requirements. In certain circumstances, trades are executed through alternative trading systems or national securities exchanges in which FMR UK or its affiliates have an interest. Any decision to execute a trade through an alternative trading system or exchange in which FMR UK or its affiliates have an interest would be made in accordance with applicable law, including best execution obligations. For trades placed on such a system or exchange, not limited to ones in which FMR UK or its affiliates have an ownership interest, FMR UK or its affiliates derive benefit in the form of increased valuation(s) of its equity interest, where it has an ownership interest, or other remuneration, including rebates.

Securities Lending Agent

FMR UK does not engage in securities lending activities on behalf of its funds. However, NFS provides securities lending services to the Fidelity group of funds and other client accounts (lending accounts) that are advised by FMR or FMR's affiliates under a securities lending agency agreement subject to a flat fee arrangement and a limit, or cap, on total daily compensation. An economic incentive exists for NFS to increase the amount of securities out on loan to generate income equal to the daily cap; however, FMR, not NFS, determines daily, the securities that are eligible to participate in the securities lending program. NFS has established policies and procedures designed to help ensure that the information NFS receives about the lending accounts in its capacity as securities lending agent is used solely in connection with the agency securities lending program and is not accessed by trading personnel who effect transactions in NFS proprietary accounts or in the accounts of NFS's other clients.

NFS also borrows securities from the Fidelity group of funds pursuant to SEC exemptive relief. NFS uses automated third-party software to allocate loans to a pre-approved list of borrowers provided by FMR to help ensure the fair allocation of lending opportunities between NFS and other borrowers. The above referenced policies and procedures help ensure that the information NFS receives in its capacity as securities lending agent is not used by NFS in its role as borrower.

If a borrower in a securities loan defaults, NFS would indemnify a lending account to the extent that the collateral deposited by the borrower is insufficient to make the lending account whole, which subjects NFS to collateral shortfall risk ("shortfall risk"). Management of the shortfall risk creates an incentive for NFS to limit the amount of securities lending activity NFS conducts on behalf of the lending accounts, which has the potential to reduce the volume of lending opportunities for certain types of loans. FMR has established policies and procedures that provide for FMR or its affiliates, as applicable, to compare loans entered into by NFS on behalf of the lending accounts with opportunities for securities loans that NFS passed over. Missed opportunities will be evaluated by FMR or its affiliates, as applicable, and reviewed with NFS. NFS has purchased insurance to mitigate shortfall risk.

Investment Companies

FMR UK provides portfolio management services for several investment companies, including investment companies in the Fidelity group of funds. FMR UK disclaims that it is a related person of the investment companies for which it provides investment management services.

Other Investment Advisers

FMR UK or its affiliates have relationships or arrangements with the following investment advisers:

Fidelity Management & Research Company LLC ("FMR"), the indirect parent company of FMR UK, is a wholly-owned subsidiary of FMR LLC and is a registered investment adviser under the Advisers Act. FMR principally provides portfolio management services as an adviser or a sub-adviser to registered investment companies. FMR also provides portfolio management services as an adviser or sub-adviser to clients of other affiliated and unaffiliated advisers. FMR provides model portfolio construction services to Strategic Advisers LLC in connection with Strategic Advisers' provision of discretionary portfolio management services to certain clients.

Fidelity Management & Research (Japan) Limited ("FMR (Japan)"), a direct wholly-owned subsidiary of FMR, is a registered investment adviser under the Advisers Act and is authorized by the Japan Financial Services Agency (Kanto Local Finance Bureau) to provide investment advisory and discretionary investment management services. FMR (Japan) supplies investment research and investment advisory information and provides discretionary investment management services to certain clients of FMR and its affiliates, including investment companies in the Fidelity group of funds, and to clients of other affiliated and unaffiliated advisers.

Fidelity Management & Research (Hong Kong) Limited ("FMR (Hong Kong)"), a wholly-owned subsidiary of FMR, is a registered investment adviser under the Advisers Act and is authorized by the Hong Kong Securities and Futures Commission to advise on securities, dealing in futures contracts, provide asset management services, and conduct trading services. FMR (Hong Kong) provides investment advisory or portfolio management services as a sub-adviser with respect to certain clients of FMR and its affiliates, including investment companies in the Fidelity group of funds, and provides trading services to FMR and its affiliates. FMR (Hong Kong) provides portfolio management services as an adviser or sub-adviser to clients of other affiliated and unaffiliated advisers.

Fidelity Personal and Workplace Advisors LLC ("FPWA"), a wholly-owned subsidiary of Fidelity Advisory Holdings LLC, which in turn is wholly-owned by FMR LLC, is a registered investment adviser under the Advisers Act. FPWA provides non-discretionary investment management services and serves as the sponsor of investment advisory programs. FMR acts as sub-advisor to FPWA in providing discretionary portfolio management services to certain FPWA client accounts.

Fidelity Institutional Wealth Adviser LLC ("FIWA"), a wholly-owned subsidiary of FMR LLC, is a registered investment adviser under the Advisers Act. FIWA provides non-discretionary investment management services and sponsors the Fidelity Managed Account Xchange program.

Strategic Advisers LLC ("Strategic Advisers") is a wholly-owned subsidiary of Fidelity Advisory Holdings LLC, which in turn is wholly-owned by FMR LLC, and is a registered investment adviser under the

Advisers Act. Strategic Advisers provides discretionary and non-discretionary advisory services and acts as the investment manager to registered investment companies that invest in affiliated and unaffiliated funds and as sub-adviser to various retail accounts, including separately managed accounts. Strategic Advisers acts as sub-advisor to FPWA in providing discretionary portfolio management services to certain FPWA client accounts, and assists FPWA in evaluating other sub-advisors. FMR, or its affiliates, provides portfolio management services as a sub-adviser to certain of Strategic Advisers' customers. Strategic Advisers is registered with the CFTC as a commodity pool operator and is a member of the NFA.

FIAM LLC ("FIAM") is a wholly-owned subsidiary of FIAM Holdings LLC, which in turn is wholly-owned by FMR LLC, and provides investment management services, including sub-advisory services to FMR or its affiliates. FIAM is a registered investment adviser under the Advisers Act. FIAM is also registered with the Central Bank of Ireland.

Ballyrock Investment Advisors LLC ("Ballyrock") is a wholly-owned subsidiary of FMR LLC, and is registered as an investment adviser under the Advisers Act. Ballyrock provides investment advisory services to collateralized loan obligation ("CLO") issuers, with a focus on investments in high yield debt securities, primarily including bank loans. FMR UK or its affiliates provides portfolio management services as a sub-adviser to clients of Ballyrock.

Impresa Management LLC ("Impresa") is owned by trusts, the trustees of which are individuals, certain of whom are employees of FMR LLC. Impresa is a registered investment adviser under the Advisers Act and serves as (i) an investment adviser and general partner or manager for certain limited partnerships or limited liability companies (the "Investor Entities"); and (ii) an investment adviser and/or the ultimate general partner or manager (either directly or indirectly through subsidiary entities) to certain collective investment entities in which the Investor Entities invest and to funds or other special purpose vehicles that co-invest or hold investments alongside such collective investment vehicles. Impresa also provides investment advisory services as an adviser to other affiliated entities or sub-adviser to other affiliated or unaffiliated entities. Impresa generally invests, on behalf of its clients, in securities of private companies, purchased and sold in privately negotiated transactions, and generally does not purchase publicly traded securities. From time to time, Impresa clients acquire or hold publicly traded securities as a result of a private portfolio company's initial public offering, the purchase of additional securities in such an initial public offering or through the acquisition of a portfolio company by a public company. Impresa from time to time invests in less established or early-stage companies, as well as later-stage private companies. For more information regarding conflicts of interests relating to proprietary trading, see "Code of Ethics, Participation or Interest in Client Transactions and Personal Trading" section herein.

Fidelity Diversifying Solutions LLC ("FDS") is a wholly-owned subsidiary of FMR LLC and a registered investment adviser under the Advisers Act. FDS is registered with the U.S. Commodity Futures Trading Commission (the "CFTC") under the Commodity Exchange Act of 1936, as amended (the "CEA"), as a commodity pool operator ("CPO") and a commodity trading adviser ("CTA"). FDS is a member of the National Futures Association (the "NFA"). FDS provides portfolio management services as an adviser and, where required, a CPO to registered investment companies, unregistered investment companies (private funds), business development companies ("BDCs") and separately managed accounts.

Fidelity Management & Research (Canada) ULC ("FMR-Canada") is an indirect wholly-owned subsidiary of FMR. FMR-Canada is registered as a portfolio manager and commodity trading manager with the Ontario Securities Commission. FMR-Canada provides portfolio management services as a sub-adviser to certain of FMR's and its affiliates' clients.

FMR UK or its affiliates provide certain investment management personnel to or use the investment management personnel of certain of the foregoing investment advisors under personnel sharing arrangements or other inter-company agreements. In addition, FMRIM (UK) or its affiliates provide certain administrative services to certain of the foregoing investment advisers, including, but not limited to, securities and derivatives trade execution, investment compliance and proxy voting.

Banking or Thrift Institutions

FMR UK or its affiliates have relationships or arrangements with the following banking and trust institutions:

Fidelity Management Trust Company ("FMTC"), a limited-purpose trust company organized and operating under the laws of The Commonwealth of Massachusetts, provides non-discretionary trustee and custodial services to employee benefit plans and IRAs through which individuals invest in mutual funds managed by FMR or its affiliates, and discretionary investment management services to institutional clients, and acts as trustee and investment manager of collective investment trusts. FMR UK or its affiliates provide portfolio management services as a sub-adviser to certain of FMTC's clients. FMTC is a wholly-owned subsidiary of FMR LLC.

Fidelity Personal Trust Company, FSB ("FPTC") is a federal savings bank that offers fiduciary services to its customers that include trustee or co-trustee services, custody, principal and income accounting, investment management services, and recordkeeping and administration. FPTC is a wholly owned subsidiary of Fidelity Thrift Holding Company, Inc., which in turn is wholly owned by FMR LLC.

Fidelity Institutional Asset Management Trust Company ("FIAM TC"), a non-depository trust company organized under the laws of the State of New Hampshire, provides investment management services principally for institutional clients, including employee benefit plans and acts as trustee and investment manager of collective investment trusts. FIAM TC is a wholly-owned subsidiary of FIAM Holdings LLC, which in turn is wholly-owned by FMR LLC.

FMR UK or its affiliates provide certain investment management personnel to or use the investment management personnel of certain of the foregoing banking and trust institutions under personnel sharing arrangements or other inter-company agreements. In addition, FMR UK or its affiliates provide certain administrative services to certain of the foregoing banking and trust institutions, including, but not limited to, securities and derivatives trade execution, investment compliance and proxy voting.

Insurance Companies or Agencies

FMR UK or its affiliates have relationships or arrangements with the following insurance companies and agency:

Fidelity Investments Life Insurance Company ("FILI"), a wholly-owned subsidiary of FMR LLC, is engaged in the distribution and issuance of life insurance and annuity products that may offer shares of investment companies managed by FMR or its affiliates.

Empire Fidelity Investments Life Insurance Company ("EFILI"), a wholly-owned subsidiary of FILI, is engaged in the distribution and issuance of life insurance and annuity products that may offer shares of investment companies managed by FMR or its affiliates to residents of New York.

Fidelity Insurance Agency, Inc., a wholly-owned subsidiary of FMR LLC, is engaged in the business of selling life insurance and annuity products of affiliated and unaffiliated insurance companies.

Fidelity Health Insurance Services LLC, a wholly owned subsidiary of FMR LLC, is an insurance licensed business entity (agency) under which certain workplace and individual insurance-related product and services are offered or sold. Product and services include Medicare-related products sold to individuals and employer-offered benefits such as broker/agent for certain group health plans, retiree transition to Medicare, and voluntary/optional insurance coverage.

Soteria Reinsurance Ltd ("Soteria Re") is owned directly by Soteria Reinsurance Holdings, LLC which itself is a 100% owned subsidiary of FMR LLC. Soteria Re is a recently incorporated Bermuda exempted company. Soteria Re will focus on reinsurance of US retail annuities and other investment-oriented insurance products underwritten by Fidelity Investment Life Insurance Company (FILI).

Participating Affiliates

Fidelity Business Services India Private Limited (“FBS India”), with its registered office in Bangalore, is incorporated under the laws of India and is ultimately owned by FMR LLC through certain of its respective direct or indirect subsidiaries. Certain employees of FBS India (FBS India Associated Employees) from time to time provide certain research services for FMR and its affiliates, which FMR and its affiliates may use for their U.S. clients.

FBS India is not registered as an investment adviser under the Advisers Act and is deemed to be a “Participating Affiliate” (as this term has been used by the SEC’s Division of Investment Management in various no-action letters granting relief from the Advisers Act’s registration requirements for certain affiliates of registered investment advisers) of FMR. FMR deems FBS India and certain of its employees as associated persons within the meaning of Section 202(a)(17) of the Advisers Act, because FBS India, through such employees, contribute to FMR’s research process and may have access to information concerning which securities are being recommended to FMR’s U.S. clients prior to the effective dissemination of such recommendations. FBS India also provides certain affiliates of FMR with certain research relating to securities that are the subject of research it provides to FMR. As a Participating Affiliate of FMR, FBS India has agreed to submit itself to the jurisdiction of United States courts for actions arising under U.S. securities laws in connection with investment advisory activities conducted for FMR’s U.S. clients. FMR maintains a list of the employees of FBS India whom it has deemed associated persons, which it will make available to current and prospective U.S. clients upon request.

Fidelity Strategic Advisers Ireland, Limited. Certain employees of Fidelity Strategic Advisers Ireland, Limited (“Strategic Ireland”) may from time to time provide certain research services for Strategic Advisers, which Strategic Advisers may use for its customers. Strategic Ireland is not registered as an investment adviser under the Advisers Act, and is deemed to be a “Participating Affiliate” of Strategic Advisers (as this term has been used by the SEC) Division of Investment Management in various no-action letters granting relief from the Advisers Act’s registration requirement for certain affiliates of registered investment advisers). Strategic Advisers deems Strategic Ireland and each of the Strategic Ireland Associated Employees as “associated persons” of Strategic Advisers within the meaning of Section 202(a)(17) of the Advisers Act. Strategic Ireland Associated Employees and Strategic Ireland through such employees, may contribute to Strategic Advisers’ research process and may have access to information concerning securities that are being selected for clients prior to the effective implementation of such selections. As a Participating Affiliate of Strategic Advisers, Strategic Ireland has agreed to submit itself to the jurisdiction of United States courts for actions arising under United States securities laws in connection with investment advisory activities conducted for Strategic Advisers’ customers. Strategic Advisers maintains a list of Strategic Ireland Associated Employees whom Strategic Ireland has deemed “associated persons,” which Strategic Advisers will make available to its current U.S. clients upon request.

11. Code of Ethics, Participation or Interest in Client Transactions and Personal Trading

Code of Ethics

From time to time, FMR UK purchases or sells for the accounts of clients securities in which FMR UK or its affiliates’ in-house accounts (including institutional accounts), affiliates, directors, officers or employees have a position. This situation results, in part, from the breadth of securities purchased by FMR UK’s or its affiliates’ varied clients and from FMR UK’s and its affiliates’ personnel being permitted to invest in securities for their personal accounts. The conflicts of interest involved in such transactions are governed by FMR’s Code of Ethics for Personal Investing and the Supplement to the Code of Ethics for Personal Investing for European-Based Employees (the “Code”), which has been adopted and approved by the Board of Trustees of FMR UK’s or its affiliates’ investment company clients in the Fidelity group of funds in accordance with Rule 17j-1 under the 1940 Act and which incorporates the Adviser’s Code of Ethics (“Adviser’s Code”) adopted in accordance with Rule 204A-1 under the Advisers Act.

The Code applies to officers, directors, and employees (including certain contractors) of FMR UK, and certain employees of its affiliates (“Advisory Personnel”) and requires that they place the interests of FMR UK’s clients above their own. The Code establishes securities transactions requirements for all Advisory Personnel and their covered persons, including their spouses. More specifically, the Code: (i) requires

that Advisory Personnel and their covered persons move their covered accounts to FBS unless an exception exists or prior approval is obtained; (ii) requires pre-clearance of transactions in covered securities with limited exceptions; (iii) requires reporting of transactions in covered securities on a quarterly basis with limited exceptions; (iv) requires reporting of securities accounts and holdings of covered securities at the time of hire and annually thereafter; (v) prohibits personal trading by a portfolio manager within seven days before or after a trade in any covered security of the same issuer by a client account managed by such portfolio manager except in limited circumstances; (vi) prohibits purchases of securities in initial public offerings unless an exception has been approved; (vii) restricts the selling short of a covered security; (viii) prohibits investments in limited offerings without prior approval; and (ix) requires disgorgement of profits from short-term transactions with limited exceptions. Violation of the Code's requirements, including certain short-term transactions, may also result in the imposition of remedial action, including termination.

In addition, the Adviser's Code, as incorporated in the Code: (1) describes the fiduciary duty Advisory Personnel have to FMR UK's clients; (2) requires Advisory Personnel of FMR UK to comply with federal securities laws; (3) requires certain Advisory Personnel of FMR UK to report, and for FMR UK to review, such Advisory Personnel's and their covered persons' mutual fund share transactions and holdings periodically (core money market funds excepted) for funds advised by FMR UK or an affiliate and certain other funds specified in the Adviser's Code; (4) requires Advisory Personnel of FMR UK to report any violations of the Code to FMR's Ethics Office; and (5) requires FMR UK to provide each Advisory Personnel with a copy of the Code and any amendments, and requires Advisory Personnel to acknowledge their receipt and understanding of the Code.

FMR UK will provide a copy of its Adviser's Code, as integrated into the Code, to any client or prospective client upon request.

Conflicts of Interest

In certain instances the purchase or sale of securities for the accounts of clients is restricted in connection with distributions of securities where FMR UK, its affiliates or their clients are proposing to act as selling shareholders in the distribution. Any such activity is evaluated in accordance with Regulation M under the Exchange Act, the 1940 Act and other applicable rules and regulations and from time-to-time results in restrictions on the ability of client accounts to purchase or sell in the distribution and/or in the secondary market. From time to time, FCM, a division of NFS, an affiliated broker-dealer of FMR UK, acts as a selling agent or principal underwriter in underwritings of municipal, equity or other securities which FMR UK recommends to clients. The Trustees of FMR UK's or its affiliates' mutual fund clients in the Fidelity group of funds evaluate any such activity by FMR UK in accordance with Rule 10f-3 under the 1940 Act and procedures adopted pursuant to Rule 10f-3.

A conflict of interest situation is presented when a portfolio manager considers investing a client account in securities of an issuer in which FMR UK, its affiliates or their (or their fund clients') respective directors, officers or employees already hold a significant position for their own account, including positions held indirectly through certain funds or accounts managed by FMR UK or one of its affiliated advisers (collectively, "Proprietary Accounts"). Because the 1940 Act, as well as other applicable laws and regulations, restrict certain transactions between affiliated entities or between an advisor and its clients, client accounts managed by FMR UK or its affiliates, including accounts sub-advised by third parties, are, in certain circumstances, prohibited from participating in offerings of such securities (including initial public offerings and other offerings occurring before or after an issuer's initial public offering) or acquiring such securities in the secondary market. For example, ownership of a company by the Investor Entities advised by Impresa or other Proprietary Accounts has, in certain situations, resulted in restrictions on FMR UK's and its affiliates' client accounts' ability to acquire securities in the company's initial public offering and subsequent public offerings, private offerings, and in the secondary market, and additional restrictions could arise in the future; to the extent such client accounts acquire the relevant securities after such restrictions are subsequently lifted, the delay could affect the price at which the securities are acquired. A conflict of interest situation is presented when FMR UK or its affiliates acquire, on behalf of their client accounts, securities of the same issuers whose securities are already held in Proprietary Accounts, because such investments could have the effect of increasing or supporting the value of the

Proprietary Accounts. A conflict of interest situation also arises when FMR UK investment advisory personnel consider whether client accounts they manage should invest in an investment opportunity that they know is also being considered by an affiliate of FMR UK for a Proprietary Account, to the extent that not investing on behalf of such client accounts improves the ability of the Proprietary Account to take advantage of the opportunity. FMR UK has adopted policies and procedures and maintains a compliance program designed to help manage such actual and potential conflicts of interest.

A conflict of interest situation is also presented if the funds' orders for the purchase or sale of securities do not get fully executed due to being aggregated with those of other accounts managed by FMR UK or an affiliate, including FMR UK's or its affiliates' in-house accounts. FMR UK has adopted policies and procedures (for example, trade allocation procedures) and maintains a compliance program designed to help manage these actual and potential conflicts. There can be no assurance, however, that all conflicts have been addressed in all situations. Trading in personal accounts, which gives rise to actual and potential conflicts of interest, is subject to certain restrictions by the Code.

From time-to-time, in connection with its business, FMR UK obtains material non-public information. In compliance with applicable laws, FMR UK has adopted a comprehensive set of policies and procedures that prohibit the use of material non-public information by investment professionals and other employees. FMR UK also has procedures addressing the use of third party paid research consultants.

In addition, FMR UK has implemented a Corporate Gifts & Entertainment Policy intended to set standards for business entertainment and the giving or receiving of gifts, help employees make sound decisions with respect to these activities, and ensure that the interests of FMR UK's clients come first. Similarly, to support compliance with applicable "pay-to-play" rules, FMR UK has implemented a Personal Political Contributions & Activities Policy which requires employees to pre-clear political contributions and activities. FMR UK also has a Global Anti-Corruption Policy regarding commercial bribery and bribery of government officials that prohibits directly or indirectly giving, offering, authorizing, promising, accepting, or receiving any bribe, facilitation payment, kickback, or payoff (whether in cash or any other form) with the intent to improperly obtain or retain business or any improper advantage.

12. Brokerage Practices

Selection of Brokers and Dealers to Effect Client Transactions

FMR UK or its affiliates generally have authority to select brokers (whether acting as a broker or a dealer) to place or execute clients' portfolio securities transactions. FMR UK or its affiliates are responsible for the placement of portfolio securities transactions for certain client accounts for which an affiliate or related person has investment discretion. In selecting a broker or dealer for a specific securities transaction, FMR UK or its affiliates evaluate a variety of criteria and use good faith judgment in seeking to obtain execution of portfolio securities transactions at commissions or costs that are reasonable in relation to the brokerage and research services provided, where allowed under applicable law.

In selecting broker-dealers ("brokers"), including affiliates of FMR UK, to execute client portfolio securities transactions, FMR UK or its affiliates consider the factors they deem relevant in the context of a particular trade and in regard to FMR UK's or its affiliates' overall responsibilities with respect to the fund and other investment accounts, including any instructions from the client's portfolio manager, which may emphasize, for example, speed of execution over other factors. Based on the factors considered, FMR UK or its affiliates may choose to execute an order using electronic channels, including broker-sponsored algorithms, internal crossing, or by verbally working an order with one or more brokers. Other possibly relevant factors include, but are not limited to, the following: price; costs; the size, nature and type of the order; speed of execution; financial condition and reputation of the broker; broker specific considerations (e.g., not all brokers are able to execute all types of trades); broker willingness to commit capital; the nature and characteristics of the markets in which the security is traded; the trader's assessment of whether and how closely the broker likely will follow the trader's instructions to the broker; confidentiality and the potential for information leakage; the nature or existence of post-trade clearing, settlement, custody and currency convertibility mechanisms; and the provision of brokerage and research products and services, if applicable and where allowed by law.

The trading desks through which FMR UK or its affiliates execute trades are instructed to execute portfolio transactions on behalf of their clients based on the quality of execution without any consideration of Research and Brokerage Services (as defined below) the broker or dealer provides. The administration of Research and Brokerage Services is managed separately from the trading desks, and traders have no responsibility for administering the research program, including the payment for research.

In seeking best execution for portfolio securities transactions, FMR UK or its affiliates from time to time select a broker that uses a trading method, including algorithmic trading, for which the broker charges a higher commission than its lowest available commission rate. FMR UK or its affiliates may also select brokers that charge more than the lowest commission rate available from another broker. Occasionally FMR UK or its affiliates execute an entire securities transaction with a broker and allocate all or a portion of the transaction and/or related commissions to a second broker where a client does not permit trading with an affiliate of FMR UK or in other limited situations. In those situations, the commission rate paid to the second broker may be higher than the commission rate paid to the executing broker. For futures transactions, the selection of a futures commission merchant is generally based on the overall quality of execution and other services provided by the futures commission merchant. FMR UK or its affiliates execute futures transactions verbally and electronically.

If FMR UK grants investment management authority to a sub-adviser, that sub-adviser will be authorized to provide the services described in the sub-advisory agreement. Furthermore, the sub-adviser's trading and associated policies, except for certain funds' Board-approved affiliated transaction policies, which may differ from FMR UK's policies, will apply to that fund or account, subject to applicable law.

Identification and Resolution of Errors

As an investment adviser, FMR UK maintains policies and procedures that address the identification and correction of errors consistent with applicable standards of care and clients' investment management agreements. To the extent that an error occurs, FMR UK's policy is to identify and resolve the error as promptly as possible. FMR UK will address and resolve errors on a case-by-case basis, in its discretion, based on each error's facts and circumstances. FMR UK is not obligated to follow any single method of resolving errors.

An incident is any occurrence or event that interrupts normal investment-related activities or that deviates from applicable law, the terms of an investment management agreement, or applicable internal or external policies or procedures. Incidents can occur at FMR UK or at one of FMR UK's service providers, and can be identified by any of the same.

The determination of whether an incident constitutes an error is made by FMR UK in its sole discretion based on the relevant facts and circumstances of each incident considered in light of the applicable standard of care. Errors include, without limitation: (i) purchases or sales that exceed the amount of securities intended to trade for a fund or account; (ii) the purchase (or sale) of a security when it should have been sold (or purchased); (iii) the purchase or sale of a security not intended for the fund or account, and/or contrary to investment guidelines or restrictions; and (iv) incorrect allocations of trades.

Situations that generally would be considered by FMR UK to be incidents but not errors include, without limitation, (i) failure by a portfolio manager to provide timely notification of an incorrect purchase of a security although the security purchased was appropriate for the fund or account; (ii) passive or active breach of an internal fund or account-level limit; (iii) failure to update a portfolio manager in a timely manner regarding an increase in shares outstanding or additional room to buy for a security that had been at an aggregate limit; and (iv) external events, such as securities exchange outages. Other situations that result from failures in internal processes, people or systems, such as other routine processing errors or major systems failures, may be deemed to be incidents and not errors depending on the facts and circumstances. For example, computer, communications, data processing, networks, cloud computing, backup, business continuity or other operating, information or technology systems, including those FMR outsources to other providers, may fail to operate properly or become disabled, overloaded or damaged as a result of a number of factors. These factors could include events that are wholly or partially

beyond FMR's control and may have a negative impact on our ability to conduct business activities. Though losses arising from operating, information or technology systems failures could adversely affect a client account's performance, such losses would likely not be reimbursable under FMR's policies.

Additionally, incidents involving fund monitoring or aggregate monitoring compliance violations may or may not be deemed by FMR UK to be errors depending on the facts and circumstances. For example, an active breach of a client mandate or regulatory limit (e.g., due to an acquisition of additional securities for an account) may be deemed to be an error and may be compensable depending on the particular circumstances, but a passive breach of such a limit (e.g., due to a reduction in the issuer's outstanding securities) would not be considered an error and would not be compensable. Active breaches of issuer or regulatory limits, including poison pill limits, may be deemed to be errors and may be compensable depending on the circumstances, but passive breaches generally will not. Further, a passive breach of an aggregate limit on holdings of a security established internally by FMR UK and its affiliates, and instances where all available aggregate capacity on a security is not fully utilized, generally are not considered errors and are not compensable, but an active breach of an internal aggregate limit may be deemed to be an error and compensable depending on the particular circumstances. To the extent that client accounts already own securities that directly or indirectly contribute to certain ownership thresholds being exceeded, FMR UK may sell securities held in such accounts to bring account-level and/or aggregate ownership below the relevant threshold. If any such sales result in losses for client accounts, those client accounts may bear such losses depending on the particular circumstances.

FMR UK is responsible for notifying, when appropriate, the affected client of an error. FMR UK generally will not notify clients about incidents deemed not to be errors and non-compensable errors, unless otherwise agreed with particular clients. All errors requiring reimbursement to a Fidelity affiliated mutual fund or ETF of \$100,000 or more must be reported to the Compliance Committee (or other applicable Committee) of the fund's or ETF's Board of Trustees at its next scheduled meeting.

When FMR UK determines that reimbursement is appropriate, the account will be compensated as determined in good faith by FMR UK. Resolution of errors includes, but is not limited to, permitting client accounts to retain gains or reimbursing client accounts for losses resulting from the error. The calculation of the amount of any loss will depend on the facts and circumstances of the error, and the methodology used by FMR UK may vary. Unless prohibited by applicable regulation or a specific agreement with the client, FMR UK will net a client's gains and losses from the error or a series of related errors with the same root cause and compensate the client for the net loss. In general, compensation is expected to be limited to direct monetary losses and will not include any amounts that FMR UK deems to be speculative or uncertain, nor will it cover investment losses not caused by the error. FMR UK may elect to establish an error account for the resolution of errors which could be used depending on the facts and circumstances.

Investment Research Products and Brokerage Services Furnished by Research Providers and Brokers

FMR UK and its affiliates have established policies and procedures relating to brokerage commission uses in compliance with Section 28(e) of the Exchange Act, the provisions of the 1940 Act, and various interpretations of the staff of the SEC thereunder, and where applicable, the revised Markets in Financial Instruments Directive in the European Union, commonly referred to as "MiFID II", as implemented in the United Kingdom through the Conduct of Business Sourcebook Rules of the UK Financial Conduct Authority (the "FCA").

FMR UK or its affiliates may execute portfolio securities transactions with brokers that provide products and services that assist them in fulfilling their investment management responsibilities ("Research and Brokerage Services") in accordance with applicable law. Research and Brokerage Services that FMR UK or its affiliates have received during the last fiscal year include, when permissible under law, but are not limited to, economic, industry, company, municipal, sovereign (U.S. and non-U.S.), legal, or political research reports; market color; compilation of securities prices, earnings, dividends and similar data; quotation services, data, information and other services; analytical computer software and services; and investment recommendations. In addition to receiving these Research and Brokerage Services via written

reports and computer-delivered services, such reports may also be provided by telephone and in video and in-person meetings with securities analysts, corporate and industry spokespersons, economists, academicians and government representatives and others with relevant professional expertise. Brokers also provide Research and Brokerage Services in the form of a specific proprietary or third-party product or service, upon request by FMR or its affiliates. Some of these Research and Brokerage Services supplement FMR UK's or its affiliates' own research activities in providing investment advice to their clients.

In addition, when permissible under applicable law, Research and Brokerage Services include those that assist in the execution, clearing and settlement of securities transactions as well as other incidental functions (including, but not limited to, communication services related to trade execution, order routing and algorithmic trading, post-trade matching, exchange of messages among brokers or dealers, custodians and institutions, and the use of electronic confirmation and affirmation of institutional trades).

To the extent permitted by applicable law, from time to time, certain brokers who execute client transactions receive compensation in recognition of their Research and Brokerage Services that is in excess of the amount of compensation that other brokers might have charged. An economic incentive exists for FMR U) and/or its affiliates to select or recommend a broker-dealer based on their interest in receiving the Research and Brokerage Services, rather than on FMR's or its affiliates' clients' interest in receiving most favorable execution. FMR UK's or its affiliates' expenses likely would be increased if they attempted to generate these additional Research and Brokerage Services through their own efforts or if they paid for these Research and Brokerage Services with their own resources. FMR UK and its affiliates manage the receipt of Research and Brokerage Services and the potential conflicts through their Commission Uses Program. The Commission Uses Program effectively "unbundles" commissions paid to brokers who provide Research and Brokerage Services, i.e., commissions consist of an execution commission, which covers the execution of the trade (including clearance and settlement), and a research charge, which is used to cover Research and Brokerage Services. Those brokers have client commission arrangements (each a "CCA") in place with FMR and its affiliates (each of those brokers referred to as "CCA brokers").

In selecting brokers for executing transactions on behalf of clients of FMR UK and its affiliates, FMR UK instructs its trading desks to select brokers and execute portfolio transactions on behalf of their clients based on the brokers' quality of execution and without any consideration of what Research and Brokerage Services the CCA broker provides. Commissions paid to a CCA broker include both an execution commission and a research charge, and while the CCA broker receives the entire commission, it retains the execution commission and either credits or transmits the research portion (also known as "soft dollars") to a CCA pool maintained by each CCA broker. Soft dollar credits ("credits") accumulated in CCA pools are used to pay research expenses. In some cases, FMR UK or its affiliates request that a broker that is not a party to any particular transaction provide a specific proprietary or third-party product or service, which would be paid with credits from the CCA pool. The administration of Research and Brokerage Services is managed separately from the trading desks, and traders have no responsibility for administering the research program, including the payment for research. FMR UK and/or its affiliates, at times, use a third-party aggregator to facilitate payments to research providers. Where an aggregator is involved, the aggregator would maintain credits in an account that is segregated from the aggregator's proprietary assets and the assets of its other clients ("segregated account") and uses those credits to pay research providers as instructed by FMR UK or its affiliates. Furthermore, where permissible under applicable law, certain of the Research and Brokerage Services that FMR UK or its affiliates receive are furnished by brokers on their own initiative, either in connection with a particular transaction or as part of their overall services. To the extent permissible under applicable law, some of these Research and Brokerage Services are provided at no additional cost to FMR UK or its affiliates or might not have an explicit cost associated with them.

In connection with the allocation of client brokerage, FMR UK and/or its affiliates make a good faith determination that the compensation paid to brokers and dealers is reasonable in relation to the value of the Research and Brokerage Services provided to FMR UK and/or its affiliates, viewed in terms of the particular transaction for the client or FMR UK's or its affiliates' overall responsibilities to that client or

other clients for which FMR UK or its affiliates have investment discretion; however, each Research and Brokerage Service received in connection with a client's brokerage does not benefit all clients, and certain clients will receive the benefit of Research and Brokerage Services obtained with other clients' commissions. As required under applicable laws or client policy, commissions generated by certain clients may only be used to obtain certain Research and Brokerage Services. As a result, certain client accounts will pay more proportionately for certain types of Research and Brokerage Services than others, while the overall amount of Research and Brokerage Services paid by each client continues to be allocated equitably. While FMR UK and its affiliates take into account the Research and Brokerage Services provided by a broker or dealer in determining whether compensation paid is reasonable, neither FMR UK, its affiliates, nor their respective clients incur an obligation to any broker, dealer, or third-party to pay any Research and Brokerage Services (or portion thereof) by generating a specific amount of compensation or otherwise. Typically, for accounts managed by FMR U's affiliates outside of the European Union or the United Kingdom, these Research and Brokerage Services assist FMR UK or its affiliates in terms of their overall investment responsibilities to a client or any other client accounts for which FMRIUK or its affiliates have investment discretion. Certain client accounts use brokerage commissions to acquire Research and Brokerage Services that also benefit other client accounts managed by FMR U) or its affiliates, and not every client account uses the Research and Brokerage Services that have been acquired through that account's commissions. In addition, FIL or its affiliates, if acting as an adviser to certain non-US accounts that have been sub-advised to FMR UK's affiliates, have reimbursed certain commissions or costs of those clients.

Accounts that are managed within the United Kingdom by FMR UK uses research payment accounts ("RPAs") to cover costs associated with equity and high income external research that is consumed by those accounts in accordance with MiFID II and FCA regulations. With RPAs, clients pay for external research through a separate research charge that is generally assessed and collected alongside the execution commission. For accounts that use an RPA, FMR UK establishes a research budget. The budget is set by first grouping accounts by strategy (e.g., asset allocation, blend, growth, etc.), and then determining what external research is consumed to support the strategies and portfolio management services provided within the European Union or the United Kingdom. In this regard, research budgets are set by research needs and are not otherwise linked to the volume or value of transactions executed on behalf of the account. For accounts where portions are managed both within and outside the United Kingdom, external research is paid using both a CCA and an RPA. Determinations of what is eligible research and how costs are allocated are made in accordance with FMR UK's and its affiliates' policies and procedures. Costs for research consumed by accounts that use an RPA are allocated among the accounts within defined strategies pro rata based on the assets under management for each account. The research charge paid on behalf of any one client that uses an RPA varies over time.

FMR UK is responsible for managing the RPA and may delegate its administration to a third-party administrator for the facilitation of the purchase of external research and payments to research providers. RPA assets are maintained in accounts at a third-party depository institution, held in the name of FMR UK. FMR UK provides to client accounts, on request, a summary of: (i) the providers paid from the RPA; (ii) the total amount they were paid over a defined period; (iii) the benefits and services received by FMR UK; and (iv) how the total amount spent from the RPA compares to the research budget set for that period, noting any rebate or carryover if residual funds remain in the RPA.

Impacted accounts, like those accounts that participate in CCA pools, at times, will make payments to a broker that include both an execution commission and a research charge, but unlike CCAs (for which research charges may be retained by the CCA broker and credited to the CCA, as described above), the broker will receive separate payments for the execution commission and the research charge and will promptly remit the research charge to the RPA. Assets in the RPA are used to satisfy external research costs consumed by the accounts. If the costs of paying for external research exceed the amount initially agreed in relation to accounts in a given strategy, the adviser may continue to charge those accounts beyond the initially agreed amount in accordance with MiFID II, continue to acquire external research for the accounts using its own resources (referred to as "hard dollars"), or cease to purchase external research for those accounts until the next annual research budget. If assets for specific accounts remain

in the RPA at the end of a period, they may be rolled over to the next period to offset next year's research charges for those accounts or rebated to those accounts.

Accounts managed by FMR UK that trade only fixed income securities will not participate in RPAs because fixed income securities trade based on spreads rather than commissions, and thus unbundling the execution commission and research charge is impractical. Therefore, FMR UK and its affiliates have established policies and procedures to ensure that external research that is paid for through RPAs is not made available to FMR UK portfolio managers that manage fixed income accounts in any manner inconsistent with MiFID II and FCA regulations.

Although FMR UK does not use client commissions to pay for products or services that do not qualify as Research and Brokerage Services, they, at times, will use commission dollars to obtain certain products or services that are not used exclusively in FMR UK's or its affiliates' investment decision-making process ("mixed-use products or services"). In those circumstances, FMR UK or its affiliates will make a good faith effort to evaluate the various benefits and uses to which they intend to put the mixed-use product or service, and will pay for that portion of the mixed-use product or service that does not qualify as Research and Brokerage Services with hard dollars.

FMR UK and/or its affiliates have arrangements with certain third-party research providers and brokers through whom FMR UK and/or its affiliates effect client trades, whereby FMR UK and/or its affiliates pay with account commissions or hard dollars for all or a portion of the cost of research products and services purchased from such research providers or brokers. If hard dollar payments are used, FMR UK and/or its affiliates, at times, will cause the client to pay more for execution than the lowest commission rate available from the broker providing research products and services to FMR UK and/or its affiliates, or that may be available from another broker. FMR UK's and its affiliates' potential determination to pay for research products and services separately is wholly voluntary on FMR UK's or its affiliates' part and may be extended to additional brokers or discontinued with any broker participating in this arrangement.

Other Considerations and Brokerage Arrangements

Commission Recapture and Broker Restrictions

From time to time, FMR UK or its affiliates engages in brokerage transactions with brokers (who are not affiliates of FMR UK) who have entered into arrangements with FMR UK or its affiliates under which the broker will, at times, rebate a portion of the compensation paid by a client account ("commission recapture"). Not all brokers with whom the client account trades have been asked to participate in brokerage commission recapture.

FMR UK or its affiliates recommend that clients do not request them to direct client portfolio transactions to specific brokers. Clients may nonetheless make such requests subject to FMR UK's or its affiliates' attempt to seek quality execution and provided that the broker is an approved counterparty of FMR UK or its affiliates. Clients should be aware that if they require FMR UK or its affiliates to direct portfolio transactions to specific brokers, or if clients restrict trading with specific brokers (for example, because of affiliations) (a) FMR UK or its affiliates may be unable to achieve most favorable execution of such directed or restricted broker transactions; (b) the client may pay higher brokerage commissions on such directed or restricted broker transactions because FMR UK or its affiliates may be unable to aggregate such transactions with other orders; and (c) the client may receive less favorable prices on such directed or restricted broker transactions.

Transactions with Certain Brokers

FMR UK or its affiliates place trades with certain brokers including NFS and Kezar Trading, LLC, with whom they are under common control or otherwise affiliated, provided FMR UK or its affiliates determine that these affiliates' trade execution abilities and costs are comparable to those of non-affiliated, qualified brokerage firms, and that such transactions be executed in accordance with applicable rules under the 1940 Act and procedures adopted by the Boards of Trustees or Directors (as applicable) of FMR's clients in the Fidelity group of funds or FMR UK's affiliates' other clients and subject to other applicable law.

In addition, from time to time FMR UK or its affiliates place client trades with brokers that use NFS or FCC as a clearing agent. Client trades placed by FMR UK or its affiliates are also executed through other alternative trading systems or exchanges in which FMR(UK or its affiliates have an interest, such as Level ATS.

Transactions Among Clients

FMR UK or its affiliates execute transactions between mutual funds and other accounts they manage (either on an advisory or sub-advisory basis), as well as with certain other clients managed by their affiliates. Such transactions for clients in the Fidelity group of funds will be executed in accordance with applicable rules under the 1940 Act, the Advisers Act and procedures adopted by the Boards of Trustees or Directors (as applicable) of FMR UK's or its affiliates' clients in the Fidelity group of funds or other clients of FMR UK or its affiliates. FMR UK or its affiliates also execute transactions between other mutual fund and non-mutual fund clients, and such transactions will be executed in accordance with applicable rules under the Advisers Act and procedures adopted thereunder. When FMR UK or its affiliates engage in adviser cross transactions, where FMR UK or its affiliates directly effect an agency transaction between advisory clients without involving a broker, FMR UK or its affiliates will receive no compensation (other than its advisory fee), directly or indirectly, for the transaction.

Non-U.S. Securities Transactions

To facilitate trade settlement and related activities in non-U.S. securities transactions, FMR UK or its affiliates effect spot foreign and forward currency transactions with foreign currency dealers. In certain circumstances, due to local law and regulation, logistical or operational challenges, or the process for settling securities transactions in certain markets (e.g., short settlement periods), spot currency transactions are effected on behalf of clients by parties other than FMR UK or its affiliates, including clients' custodian banks (working through sub-custodians or agents in the relevant non-U.S. jurisdiction) or broker-dealers that executed the related securities transaction.

Trade Allocation Policies

Bunched Trades

It is generally FMR UK's or its affiliates' practice, when appropriate, to combine or "bunch" orders of various accounts, including those of its clients, its affiliates' clients, and, in certain instances, proprietary accounts (to the extent allowed by law), for order entry and execution. Bunched orders are executed through one or more brokers. The allotment of trades among brokers is based on a variety of factors, which include price, order size, the time of order, the security and market activity. A bunched trade executed with a particular broker is generally allocated pro-rata among the accounts that are participating in the bunched trade until any account has been filled. After any account has been filled, the trade is allocated pro-rata among any remaining accounts. Each broker's execution of a bunched order will, at times, be at a price different than another broker's bunched order execution price for the same security. Additionally, as a result of accommodating the differing arrangements regarding the payment for research that is required by MiFID II, clients in a bunched trade will, at times, not pay a pro rata share of all costs associated with that bunched trade.

Allocation of Trades

FMR UK and its affiliates have established allocation policies for their various accounts (including proprietary accounts) and securities types (e.g., equity, fixed income and high income) to ensure allocations are appropriate given clients' differing investment objectives and other considerations. These policies also apply to initial and secondary offerings and to private security investments. When, in FMR UK's or its affiliates' opinion, the supply/demand is insufficient under the circumstances to satisfy all outstanding orders, across all securities types the amount executed generally is distributed among participating accounts based on account net asset size (for purchases) and security position size (for sales), or otherwise according to the allocation policies. With limited exceptions, the trading systems contain rules that allocate trades on an automated basis in accordance with these policies. Generally, any exceptions to FMR UK's and its affiliates' policies (i.e., special allocations) must be approved by senior trading and compliance personnel and documented.

FMR UK's and its affiliates' trade allocation policies identify circumstances under which it is appropriate to modify or deviate from the general allocation criteria and describe the alternate procedures. For

allocations based on net assets, the trade allocation policies for each of equity, fixed income, and high income define the method of calculating net assets to be used depending on particular circumstances. The trade allocation policies define net assets generally by reference to each account's assets managed by each of the equity, fixed income or high income divisions, and by reference to certain security and account types, such as high income, investment grade or equity securities and accounts, as summarized below:

Security and Account Type	Equity Trading Desk	Fixed Income Trading Desk	High Income Trading Desk
High Income	1%	1% (except 100% if buying High Income security on Fixed Income desk)	100%
Equity	100%	1%	1%
Fixed Income	1%	100%	1% (except 100% if buying Fixed Income security on High Income desk)

The high income trade allocation policy also defines net assets similarly for bank loan and real estate accounts when acquiring bank loan and real estate securities, respectively. The high income policy generally provides that 100% of a bank loan account's net assets, but only 10% of net assets for other types of high income accounts, will be taken into account when allocating bank loans. Conversely, the high income trade allocation policy generally provides that only 10% of a bank loan account's net assets will be taken into account when allocating high income securities other than bank loans.

The equity trade allocation policy further provides that certain portfolios that are not managed by the equity division but as part of their principal investment strategies or objectives trade common stock and instruments that trade on the equity desk, would receive an asset measure that is based on the maximum amount that each portfolio could invest in securities that trade on the equity desk. The equity and high income trade allocation policies also provide that certain multi-asset class portfolios that have principal investment strategies or objectives that include securities across all asset types will have 100% of their assets taken into account for allocation purposes when trading on the equity or high income trading desks, respectively. The equity trade allocation policy allows for certain specialized accounts, such as international, real estate investment or convertible securities accounts to receive an increased allocation by increasing the weighting of an account's net assets by a factor of two or four where the securities correlate closely to the investment objective or focus of the account. FMR UK and its affiliates utilize standard criteria, such as country of risk or country of incorporation, to determine whether an international security correlates to the investment objective or focus of the account. The equity trade allocation policy also allows for accounts that invest their assets primarily in private company securities to receive an increased allocation by increasing the weightings of the accounts' net assets by a certain factor for investments in those types of securities. Short sale and "buy to cover" transactions generally are subject to the same general allocation criteria as non-short sale transactions, and thus could experience significant delays in execution, which could materially impact the performance of accounts whose strategies rely on short sales.

What constitutes net assets differs for certain specialized accounts. For portfolios that raise capital through private offerings, the equity, high income, and fixed income trade allocation policies define net assets based on expected, secured, and/or funded capital, or a combination thereof, depending upon the stage of the portfolio's fundraising process. The high income policy defines net assets for collateralized loan obligation portfolios based on expected and total market exposure. Additionally, under the fixed

income trade allocation policy, when defining what constitutes net assets for separately managed account (SMA) clients when trading alongside other client accounts, the assets of SMAs that follow similar investment strategies are grouped into an omnibus trading account, where that omnibus trading account is treated as a single portfolio for allocation purposes. After a retail SMA omnibus trading account receives an allocation of a purchase or sale of a security or other investment, such allocation will generally be further allocated among the SMAs participating in the account on a pro rata basis based on the final order size of each SMA.

Alternate allocation methods other than net asset size (for purchases) and security position size (for sales) are employed under certain circumstances, including for specialized strategies or alternative asset classes such as private equity and private real estate. The equity trade allocation policy allows for certain accounts designed to have common investment and trading strategies (e.g., one portfolio modeled on another portfolio) to receive allocations that would facilitate keeping the portfolios' holdings proportionately balanced. The fixed income trade allocation policy allows for several alternate allocation methods, in some cases only where the portfolio managers of all accounts involved in the allocation agree to the use of the alternate methods as follows:

- pro rata allocations based on the size of the accounts' orders;
- rotating investment opportunities among accounts that trade consistently on specific trading desks (e.g., taxable bond desks or money market desks);
- bunching securities or other investments that are deemed to be fungible and then allocating the bunched orders on a series basis so as to keep like-securities or other investments grouped together; and/or
- providing a priority allocation for trades the execution of which are contingent on the execution of other trades.

The fixed income trade allocation policy also provides for increased or priority allocations for accounts specializing in a particular type of security or other investment including the following:

- priority allocations for certain accounts for repurchase agreements;
- increased allocations of municipal securities to single state municipal money market and municipal bond accounts for obligations that are tax-exempt within their state; and
- a priority allocation of U.S. Treasury money market securities to Treasury-only money market accounts.

In addition, futures contracts are allocated based on order size.

All of the trade allocation policies generally provide for minimum allocations based on market-defined minimum denominations, or otherwise allow increased or decreased allocations in the following circumstances:

- to avoid a *de minimis* allocation
- to round to a trading round lot, or
- in the case of the high income trade allocation policy, to complete a sale of all holdings to avoid residual holdings in an amount less than a basic unit of trading.

Trade allocations are also impacted by various regulatory requirements depending on where the trade is executed and what types of accounts are included in the trade. In such circumstances, some accounts, at times, will be prioritized over others when supply/demand is insufficient. Client accounts receive priority of allocation over proprietary accounts. Accounts for which all the assets are those of FMR UK or its affiliates and are not otherwise used to seed new investment products or to meet potential claims of insurance policyholders are generally considered to be proprietary accounts.

Accounts owned or managed for the benefit of individual employees of FMR UK or its affiliates or officers or trustees of various investment products are generally considered client accounts, subject to applicable law.

13. Review of Accounts

Portfolio management assignments are made based on several factors, including the relevant experience and ability of the managers, the complexity of the funds' mandate and structure, the physical location of personnel, and similarities among funds assigned to a manager. Each portfolio manager regularly reviews the holdings in the funds or accounts for which he or she is responsible.

Portfolio managers draw on a large research and trading staff of FMR UK or its affiliates for support. FMR UK's and its affiliates' investment activities are organized on a group basis, with portfolio managers of similar accounts forming these groups. There are various groups directly related to portfolio management and other groups comprising FMR UK's or its affiliates' fundamental research departments, each of which has Chief Investment Officers or Managing Directors of Research. Each Chief Investment Officer and Managing Director of Research regularly receives detailed analysis of the funds and accounts in their oversight groups and conducts periodic fund and account reviews with each manager. In addition, FMR's Asset Management Compliance group monitors the funds' and accounts' trading activity for compliance with applicable regulations.

FMR UK and its affiliates generally apply investment guidelines consistent with any applicable policies as determined by FMR UK or its affiliates, which include default interpretative guidance for certain phrases or terminology in the absence of specific and/or explicit guidance from a client, in the case of a separate or sub-advised account, or in a collective investment vehicle's investment guidelines.

The Trustees of each investment company client review at least annually the activities of FMR UK's responsible portfolio managers, and review on a regular basis the performance of the Fidelity Funds. FMR's Treasurer's Office monitors the operations of the Fidelity Funds on an ongoing basis. FMR UK also provides investment advisory services on a discretionary or non-discretionary basis to other entities, or clients of other entities, related or unrelated to FMR UK. These entities, or their clients, similarly review the activities of FMR UK's portfolio managers and other investment professionals.

Members of the Board of Trustees of each of FMR UK's or its affiliates' investment company clients in the Fidelity group of funds are supplied periodic reports providing, among other items, comparative performance data, sales and redemptions of shares information, and certain brokerage commission reports.

FMR UK generally supplies similar data in its capacity as a sub-adviser. Reports to other non-investment company clients are prepared as requested by such clients. In limited circumstances in response to client inquiries, FMR UK or its affiliates provide research related information with respect to securities held in the relevant client's portfolio, in some instances on a delayed basis.

14. Client Referrals and Other Compensation

FMR UK does not have client referral arrangements.

15. Custody

FMR UK does not serve in a custodian role for Fidelity mutual funds or any other client account. FMR UK may be deemed to have custody of client assets because it or certain of its affiliates may have the ability to deduct FMR UK's advisory fees directly from certain of its collective fund clients' accounts and/or legal capacity to access collective fund clients' accounts (even though an independent, qualified custodian has been appointed by such funds or accounts to serve as custodian).

Such clients will receive account statements from the independent, qualified custodian that has been appointed to serve as custodian with respect to clients' accounts. Clients who receive these statements should review them carefully.

16. Investment Discretion

FMR UK's discretionary authority to manage accounts on behalf of its clients, and any limitations that are imposed on such authority, are described in "Advisory Business" section herein.

FMR UK and its affiliates exercise discretionary authority on behalf of their mutual fund and ETF clients pursuant to management contracts and sub-advisory agreements (together, the "Advisory Contracts"). The Advisory Contracts are entered into in accordance with Section 15 of the 1940 Act, and approved and renewed by each fund's Board of Trustees, including the Independent Trustees. In approving the Advisory Contracts, the Board of Trustees authorizes by resolution FMR UK's and its affiliates' ability to exercise discretionary authority and the Advisory Contracts contain the terms and limitations, if any, with regard to the authority granted.

In considering whether to approve or renew the Advisory Contracts for a fund, the Board of Trustees considers all factors it believes relevant, including (i) the nature, extent, and quality of the services to be provided to the fund and its shareholders (including the investment performance of the fund); (ii) the competitiveness of the fund's management fee and total expenses; (iii) the total costs of the services to be provided and the profits to be realized by FMR UK or its affiliates from its relationship with the fund; (iv) potential "fallout benefits," if any, FMR UK or its affiliates may receive as a result of their association with Fidelity's mutual funds; and (v) whether economies of scale have been realized in respect of the management of the fund, whether the fund has appropriately benefited from any such economies of scale, and whether there is potential for realization of any further economies of scale.

With respect to FMR UK's or its affiliates' non-registered investment company clients, FMR UK or its affiliates provide advisory services pursuant to management or sub-advisory agreements, the terms of which are negotiated with such clients. As with FMR UK's or its affiliates' mutual fund and ETF clients, the management and/or sub-advisory agreements contain the terms and limitations, if any, with regard to the authority granted.

17. Voting Client Securities

When authorized by clients, FMR UK or its affiliates ("Fidelity") generally cast votes on behalf of client accounts by proxy at shareholder meetings of issuers in which Fidelity invests client assets. Fidelity has established formal written proxy voting guidelines ("Proxy Voting Guidelines") and sustainable proxy voting guidelines with respect to certain sustainable investing strategies, including the funds listed on the exhibit to those guidelines ("Sustainable Proxy Voting Guidelines," and together with the Proxy Voting Guidelines, the "Guidelines," unless otherwise noted). The Guidelines are designed to ensure that proxies on behalf of the Fidelity Funds or client accounts (to the extent authorized by clients) are voted in a manner consistent with the best interests of shareholders. Fidelity has also adopted the Guidelines as part of its proxy voting policies and procedures in accordance with Rule 206(4)-6 under the Advisers Act.

Fidelity votes on behalf of the Fidelity Funds or client accounts (to the extent authorized by clients) in accordance with the Guidelines. The Boards of Trustees of the Fidelity Funds delegated to Fidelity the authority to vote shares owned by the Fidelity Funds in accordance with the Guidelines. Investment Proxy Research ("IPR") casts the votes on behalf of the Fidelity Funds.

In evaluating proxies, Fidelity considers factors that are financially material to individual companies and investing funds' investment objectives and strategies in support of maximizing long-term shareholder value. This includes considering the company's approach to financial, operational, human and natural capital and the impact of that approach of the potential future value of the business.

Fidelity will vote on proposals not specifically addressed by the Guidelines based on an evaluation of a proposal's likelihood to enhance the long-term economic returns or profitability of the company or to maximize long-term shareholder value.

Proposals Relating to Director Elections

Fidelity generally will support director nominees in elections where all directors are unopposed (uncontested elections), except where board composition or pay-related practices raise concerns, and/or where a director clearly appears to have failed to exercise reasonable judgment or otherwise failed to sufficiently protect the interests of shareholders. Fidelity will evaluate board composition and generally will oppose the election of certain or all directors if, by way of example: inside or affiliated directors serve on boards that are not composed of a majority of independent directors; there is no gender diversity on the board or if a board of ten or more members has fewer than two gender diverse directors; there are no racially or ethnically diverse directors; the director is a public company CEO who sits on more than two unaffiliated public company boards; or the director, other than a CEO, sits on more than five unaffiliated public company boards. Fidelity generally will oppose the election of directors if, by way of example: the director attended fewer than 75% of the total number of meetings of the board and its committees on which the director served during the company's prior fiscal year, absent extenuating circumstances; the company made a commitment to modify a proposal or practice to conform to the Guidelines, and failed to act on that commitment; the company has not adequately addressed concerns communicated by Fidelity in the process of discussing executive compensation; the compensation appears misaligned with shareholder interests or is otherwise problematic and results in concerns with: the alignment of executive compensation and company performance relative to peers and the structure of the compensation program, including factors outlined in the Guidelines, or, within the last year, and without shareholder approval, a company's board of directors or compensation committee has either re-priced outstanding options, exchanged outstanding options for equity, tendered cash for outstanding options, or adopted or extended a golden parachute; or the board adopted or extended an anti-takeover provision without shareholder approval. Fidelity generally will support proposals calling for directors to be elected by a majority of votes cast if the proposal permits election by a plurality in the case of contested elections. Fidelity may oppose a majority voting shareholder proposal where a company's board has adopted a policy requiring the resignation of an incumbent director who fails to receive the support of a majority of the votes cast in an uncontested election.

Fidelity believes that strong management creates long-term shareholder value. As a result, Fidelity generally will vote in support of management of companies in which the Fidelity Funds' and other clients' assets are invested. Fidelity will vote its proxy on a case-by-case basis in a contested election (where directors are forced to compete for election against outside director nominees), taking into consideration a number of factors, among others: management's track record and strategic plan for enhancing shareholder value; the long-term performance of the company compared to its industry peers; and the qualifications of the shareholder's and management's nominees. Fidelity will vote for the outcome it believes has the best prospects for maximizing shareholder value over the long-term.

Proposals Relating to Executive Compensation

Fidelity generally will support proposals to ratify executive compensation unless such compensation appears misaligned with shareholder interests or is otherwise problematic, taking into account: (i) the actions taken by the board or compensation committee in the previous year, including whether the company repriced or exchanged outstanding stock options without shareholder approval; adopted or extended a golden parachute without shareholder approval; or adequately addressed concerns communicated by Fidelity in the process of discussing executive compensation; (ii) the alignment of executive compensation and company performance relative to peers; and (iii) the structure of the compensation program, including factors such as whether incentive plan metrics are appropriate, rigorous and transparent; whether the long-term element of the compensation program is evaluated over at least a three-year period; the sensitivity of pay to below median performance; the amount and nature of non-performance-based compensation; the justification and rationale behind paying discretionary bonuses; the use of stock ownership guidelines and amount of executive stock ownership; and how well elements of compensation are disclosed.

Proposals Relating to Equity Compensation Plans

The Guidelines generally oppose equity compensation plans or amendments to authorize additional shares under such plans if: the company grants stock options and equity awards in a given year at a rate higher than a benchmark rate ("burn rate") considered appropriate by Fidelity and there were no circumstances specific to the company or the compensation plans that led Fidelity to conclude that the

rate of awards is otherwise acceptable; the plan includes an evergreen provision, which is a feature that provides for an automatic increase in the shares available for grant under an equity compensation plan on a regular basis; or the plan provides for the acceleration of vesting of equity compensation even though an actual change in control does not occur. As to stock option plans, considerations include the following: the Guidelines that support the pricing of options should be priced at 100% of fair market value on the date they are granted; the Guidelines generally oppose the pricing of options at a discount to the market, although the price may be as low as 85% of fair market value if the discount is expressly granted in lieu of salary or cash bonus; and the Guidelines generally oppose the re-pricing of underwater options (options with an exercise price that is higher than the current price of the stock) because it is not consistent with a policy of offering options as a form of long-term compensation. Fidelity also generally opposes a stock option plan if the board or compensation committee has repriced options outstanding in the past two years without shareholder approval.

Proposals Relating to Changes in Corporate Control

The Guidelines generally oppose measures that are designed to prevent or obstruct corporate takeovers. Such measures include: classified boards, “blank check” preferred stock, golden parachutes, poison pills, supermajority provisions, restricting shareholders’ right to call special meetings or to set board size, and any other provision that eliminates or limits shareholder rights.

Proposals Relating to Shareholder Rights

The Guidelines generally: (i) support simple majority voting, (ii) oppose cumulative voting, and (iii) oppose new classes of stock with differential voting rights, subject to evaluation of such proposals in the context of their likelihood to enhance long-term economic returns or maximize long-term shareholder value.

Proposals Relating to Natural and Human Capital Issues

Fidelity generally considers management’s recommendation and current practice when voting on shareholder proposals concerning human and natural capital issues because it generally believes that management and the board are in the best position to determine how to address these matters.

Fidelity, however, also believes that transparency is critical to sound corporate governance. Fidelity evaluates shareholder proposals concerning natural and human capital topics. To engage and vote more effectively on the growing number of submitted proposals on these topics, we developed a four- point decision-making framework. In general, Fidelity will more likely support proposals that:

- Address a topic that our research has identified as financially material;
- Provide disclosure of new or additional information to investors without being overly prescriptive;
- Provide valuable information to the business or investors by improving the landscape of investment- decision relevant information or contributing to our understanding of a company’s processes and governance of the topic in question; and
- Are realistic or practical for the company to comply with.

For funds that apply the Sustainable Proxy Voting Guidelines (which are listed on the exhibit to those guidelines), shareholder proposals related to natural and human capital topics are voted in accordance with those sustainable guidelines.

For proposals related to topics not specifically addressed by the Sustainable Proxy Voting Guidelines, Fidelity applies the four-point decision-making framework noted above through the lens of the sustainable funds’/accounts’ investment objectives and strategies, and therefore, certain elements of the framework may be evaluated differently for the sustainable funds/accounts than for other funds/accounts.

Securities on Loan

Securities on loan as of a record date cannot be voted. In certain circumstances, Fidelity may recall a security on loan before record date (for example, in a particular contested director election or a noteworthy merger or acquisition). Generally, however, securities out on loan remain on loan and are not voted because, for example, the income a fund or client account derives from the loan outweighs the benefit the fund or client account receives from voting the security. In addition, Fidelity may not be able to

recall and vote loaned securities if Fidelity is unaware of relevant information before record date, or is otherwise unable to timely recall securities on loan.

Conflicts of Interest

Voting of shares is conducted in a manner consistent with Fidelity's fiduciary obligations to the funds and accounts, and all applicable laws and regulations. In other words, Fidelity votes in a manner consistent with the Guidelines and in the best interests of the funds/accounts and their shareholders, and without regard to any other Fidelity companies' business relationships. Fidelity takes its responsibility to vote shares in the best interests of the funds or accounts seriously and has implemented policies and procedures to address actual and potential conflicts of interest.

IPR, which is part of the Fidelity Fund and Investment Operations department, is charged with administering the Guidelines as agent to facilitate the voting of proxies. IPR votes proxies without regard to any other Fidelity companies' business relationships with that portfolio company. Like other Fidelity employees, IPR employees have a fiduciary duty to never place their own personal interest ahead of the interests of fund/account shareholders and are instructed to avoid actual and apparent conflicts of interest. In the event of a conflict of interest, Fidelity employees will follow the escalation process included in Fidelity's corporate policy on conflicts of interest. A complete set of the Guidelines, as well as information on how the Fidelity Funds' proxies were voted, are available on www.fidelity.com.

In certain cases, clients have not provided FMR UK the authority to vote proxies. Such clients should obtain proxies from their custodian or other service provider.

If FMR UK has engaged a sub-adviser, that sub-adviser votes proxies according to its own proxy voting guidelines and policies, which may differ from the Guidelines, for those Fidelity Funds or client accounts (or portions thereof) for which the sub-adviser has been granted such authority.

18. Financial Information

FMR UK does not solicit prepayment of client fees. Furthermore, there are no financial conditions that are reasonably likely to impair FMR UK's ability to meet any of its contractual commitments to its clients.

19. Requirements for State-Registered Advisers

FMR UK is not registered with any state securities authority.