

SIGMA X HONG KONG – USER GUIDELINES

EFFECTIVE DATE – [22 April 2022]

SIGMA X Hong Kong (“SIGMA X”) is an automated trading service on which orders for securities listed on the Stock Exchange of Hong Kong Limited (“SEHK”) may be matched. SIGMA X is operated by Goldman Sachs (Asia) Securities Limited (“GSASL”) under a Type 7 (providing automated trading services) license granted by the Securities and Futures Commission (the “SFC”).

These user guidelines (“Guidelines”) are prepared under paragraph 9 (ALP Guidelines) of Schedule 8 to the Code of Conduct for Persons Licensed by or Registered with the Securities and Futures Commission, which requires GSASL to prepare and publish on its website comprehensive and accurate guidelines concerning SIGMA X, which properly and fairly provide guidance to the users of SIGMA X concerning the operation of SIGMA X.

Existing clients of any member of the Goldman Sachs group of companies (such companies together, “GS”, “we” or “us”) who wish to have their orders routed to SIGMA X must meet the requirements set out in paragraph 2 (User restrictions) below. In these Guidelines, clients of GS which are permitted to route orders to SIGMA X are referred to as “users”.

1. Trading and operational matters

1.1 Price: Transactions may be matched in SIGMA X at or within the prevailing best bid and offer on the SEHK (see paragraph 4 below).

1.2 Mid-or-better: Users can be enabled to only match in SIGMA X at the mid-price or better. The mid-price is calculated using the prevailing best bid and offer on the SEHK. When this setting is enabled, crosses would not occur at prices worse than the mid-price (e.g. no higher than the mid-price when buying, and no lower than the mid-price when selling). Please contact your sales representative to enable this setting.

1.3 Trading hours: SIGMA X will match orders during the Continuous Trading Session excluding Extended Morning Session on the SEHK. SIGMA X will not match orders during the Pre-Opening Session. Orders placed shortly before the close of a trading session may be suspended, rejected, cancelled, or routed to the SEHK.

1.4 Trade reporting: Transactions conducted on SIGMA X will be reported to the SEHK in accordance with the rules and regulations of the SEHK.

1.5 Execution time: The execution time of a transaction matched on SIGMA X will be based on the execution timestamp when SIGMA X matches the orders.

1.6 Order size: The minimum cross size for matching on SIGMA X is the SEHK board lot for the relevant securities, and the maximum cross size is 3,000 board lots.

1.6.1 Minimum Executable Quantity: Users may configure their orders to only match opposite orders of or above a specific quantity in SIGMA X. When this setting is enabled for an order, SIGMA X will match the order only when a single opposite side order has a quantity equal to or larger than the minimum executable quantity.

1.7 Order types: SIGMA X supports limit orders and pegged orders (e.g., peg-bid, peg-ask, peg-mid) with a limit price.

1.8 Order and matching restrictions: Bids and offers placed by the same user, short sell orders, and orders for securities which are subject to a trading suspension or trading halt, will not be matched on SIGMA X. Orders which do not contain all information required by us (including but not limited to trader identity) will not be matched on SIGMA X, and may be suspended, rejected, cancelled, or routed to the SEHK. Additional matching restrictions may also be imposed from time to time as we deem appropriate.

1.9 Suspension of SIGMA X and contingency arrangements: We may suspend operation of SIGMA X, either generally or in relation to specific securities, at any time without prior notice. The operation of SIGMA X will be suspended if, among other things, (a) the SEHK is closed, (b) market data is unavailable, (c) we are unable to report matches to the SEHK on a timely basis for any reason, or (d) if the usage capacity of SIGMA X is exceeded.

If SIGMA X is not operational due to system or component failure or other reasons, unexecuted orders may be suspended, rejected, cancelled, or routed to the SEHK. Please contact your sales representative regarding alternative means of executing orders, including routing to the SEHK.

2. User restrictions

Before permitting a client to route its first order to SIGMA X, we are required to:

- take all reasonable steps to ascertain, and have in place measures which ensure, that the client is a "qualified investor"; and
- bring these Guidelines to the client's attention.

For this purpose, "qualified investor" means:

(a) A person falling under paragraphs (a) to (i) (inclusive) of the definition of "professional investor" contained in section 1 of Part 1 of Schedule 1 of the Securities and Futures Ordinance; or

(b) A person within the meaning of sections 4, 6 (other than a person referred to in section 6 (b) (ii)) or 7 of the Securities and Futures (Professional Investor) Rules.

3. Matching methodology and order routing

3.1 Matching methodology: Orders are matched on the basis of price-time priority, provided that:

- (a) Client orders will have priority over firm orders when such orders are being transacted at the same price, irrespective of the time when orders are placed (see paragraph 8 below); and
- (b) Users may elect not to match against firm orders or specific types of order flow. Please contact your sales representative to record your preferences.

3.2 Order routing: Orders from eligible users may be routed to SIGMA X via the standard execution channels as agreed with GS. Orders from eligible users which are routed to the firm's smart order router or algorithms may be on-routed to SIGMA X.

3.3 Opting out: Users who are permitted to route orders to SIGMA X may, at any time, opt-out of SIGMA X for all orders.

4. Transaction pricing

Orders will only be matched in SIGMA X at or within the prevailing best bid and offer on the SEHK. For this purpose, we rely on the pricing information received from the SEHK or other market data vendors we consider reliable. The time at which the bid and offer information is obtained may differ from the execution time (see paragraph 1.5 above). In exceptional circumstances, pricing information may be delayed due to reasons beyond our control, which may result in orders being matched in SIGMA X outside the prevailing best bid and offer on the SEHK.

If the Volatility Control Mechanism has been triggered for a covered stock on the SEHK, orders for that stock will only be matched in SIGMA X at or within the applicable price bands during the cooling-off period. Orders outside of the applicable price bands will remain in SIGMA X but will not be considered eligible for matching until the cooling-off period has ended.

5. Order amendment and cancellation

Users may amend or cancel unexecuted orders in the same manner as the initial order is placed.

Orders which are not executed by the close of the trading day will be removed from SIGMA X, and will not be automatically rolled over for next day trading.

Any amendment of the price of an order, and any increase in the quantity of an order, will result in loss of queue priority of the order in SIGMA X.

Orders may also be suspended, rejected, cancelled or re-routed as described in paragraphs 1.3, 1.8 and 1.9.

6. Internal controls to ensure the fair and orderly functioning of SIGMA X and to address potential conflicts of interest

6.1 System controls enforce the fair and orderly functioning of SIGMA X, including the priority, order routing and execution methodologies mentioned above. We also conduct real-time and end of day monitoring of the system to ensure matching behavior is consistent with design.

6.2 Conflicts of interest are mitigated by the following:

- Users may opt out of matching against firm orders in SIGMA X.
- Client orders are matched on the basis of price-time priority, and have priority over firm orders of the same price, regardless of the time of the firm order (see paragraphs 3.1 and 8).
- Real-time visibility of unexecuted orders is limited on a need-to-know basis (see paragraph 10).
- GS firm traders do not have access to real-time information relating to orders or transactions conducted on SIGMA X generally, other than transactions resulting from orders placed by the GS firm trading team.
- Users are given adequate information about SIGMA X (including in these Guidelines) before placing their first order in SIGMA X.

7. Potential risks associated with transactions conducted on SIGMA X

Trading through SIGMA X exposes users to risks associated with system or component failure. In the event of system or component failure, users may not be able to enter new orders, execute existing orders, or modify or cancel orders that were previously entered. System or component failure may also result in loss of orders or order priority.

Although orders will only be matched in SIGMA X at or within the prevailing best bid and offer on the SEHK, the execution price for orders matched in SIGMA X may not always be better than the price that could have been achieved on the SEHK or other execution venues.

If two opposing orders are matched in SIGMA X, but we do not receive SEHK acknowledgement of the match within a specified time, the match will be deemed not to have occurred.

8. Transaction of firm orders

In these Guidelines, “firm order” means an order for:

- (a) the account of GS trading as principal (including client facilitation and synthetic hedge orders);
- (b) any account in which GS has an interest; or
- (c) the account of any employee or agent of GS.

Firm orders raised by Goldman Sachs trading desks may be routed to SIGMA X.

Client orders may be matched against firm orders, unless the user has previously requested in writing that their orders may not be matched against firm orders.

Client orders will have priority over firm orders when such orders are being transacted at the same price, irrespective of the time when orders are placed.

9. Aggregation of orders

Not applicable.

10. Access to trading information on SIGMA X

Access to information concerning orders routed to, and transactions conducted in, SIGMA X is limited to staff members whose access to such information is necessary to enable SIGMA X to operate satisfactorily and efficiently.

Department	Title	Real-time visibility of <u>all</u> unexecuted orders in SIGMA X (pre-execution)	Real-time visibility of <u>all</u> transactions executed in SIGMA X (post-execution)	Rationale
Engineering	First line support and order management system developers (all levels)	Yes	Yes	Necessary for system maintenance and client support
Equities	Electronic trading coverage team (all levels)	No	No (only transactions of covered clients)	Necessary for client support, troubleshooting and risk management purposes
Equities	Sales trading coverage team (all levels)	No	No (only transactions of covered clients)	Necessary for client support, troubleshooting and risk management purposes
Equities	Firm trading team (all levels)	No	No (only transactions of firm trading team)	Necessary for risk management purposes

Transactions matched on SIGMA X are reported to the SEHK, and the symbol, price, quantity and time of the transactions will be public information. Transaction information (including client identity information) will also be submitted to the SFC on a regular basis and upon request by the SFC in accordance with applicable regulatory requirements.

Other teams (such as Operations and Compliance) may have access to information on transactions matched on SIGMA X on a post-trade basis. Other end of day reports (which may contain client identity information) are generated to monitor the performance of SIGMA X and the opportunities to improve performance. Electronic trading coverage and engineering personnel have access to these reports to identify issues and opportunities for improving the performance of SIGMA X.

11. Information for users

We will make available regular transaction analyses concerning the transactions that are conducted on users' behalf on SIGMA X upon request.

12. Amendment of Guidelines

We may from time to time amend these Guidelines. The most recent version will be available on the Goldman Sachs Disclosures website at <https://www.goldmansachs.com/disclosures> or on request.

Disclaimer

This message has been prepared by personnel in the Goldman Sachs FICC and Equities business units of one or more affiliates of The Goldman Sachs Group, Inc. ("Goldman Sachs") and is not the product of Global Investment Research. It is not a research report and is not intended as such.

Non-Reliance and Risk Disclosure: This material is for the general information of our clients and is a solicitation of derivatives business generally, only for the purposes of, and to the extent it would otherwise be subject to, CFTC Regulations 1.71 and 23.605. This material should not be construed as an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. We are not soliciting any specific action based on this material. For the purposes of U.S. rules and regulations, it does not constitute a recommendation or take into account the particular investment objectives, financial conditions, or needs of individual clients. Before acting on this material, you should consider whether it is suitable for your particular circumstances and, if necessary, seek professional advice. The price and value of the investments referred to in this material and the income from them may go down as well as up, and investors may realize losses on any investments. Past performance is not a guide to future performance. Future returns are not guaranteed, and a loss of original capital may occur. We do not provide tax, accounting, or legal advice to our clients, and all investors are advised to consult with their tax, accounting, or legal advisers regarding any potential investment. The material is based on information that we consider reliable, but we do not represent that it is accurate, complete and/or up to date, and it should not be relied on as such. Opinions expressed are our current opinions as of the date appearing on this material only and only represent the views of the author and not those of Goldman Sachs, unless otherwise expressly noted.

Conflict of Interest Disclosure: We are a full-service, integrated corporate advisory, investment management, and brokerage firm. The professionals who prepared this material are paid in part based on the profitability of The Goldman Sachs Group, Inc., which includes earnings from the firm's trading, capital markets, corporate advisory and other business. They, along with other salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients that reflect opinions that are contrary to the opinions expressed herein or the opinions expressed in research reports issued by our Research Departments, and our market making, investing and lending businesses may make investment decisions that are inconsistent with the views expressed herein. In addition, the professionals who prepared this material may also produce material for, and from time to time, may advise or otherwise be part of our trading desks that trade as principal in the securities mentioned in this material. This material is therefore not independent from our interests, which may conflict with your interests. We and our affiliates, officers, directors, and employees, including persons involved in the preparation or issuance of this material, may from time to time have "long" or "short" positions in, act as principal in, and buy or sell the securities or derivatives (including options) thereof in, and act as market maker or specialist in, and serve as a director of, companies mentioned in this material. In addition, we may have served as manager or co manager of a public offering of securities by any such company within the past three years

Not a Fiduciary: To the extent this material is provided to an employee benefit plan or account subject to the Employee Retirement Income Security Act of 1974, as amended ("ERISA") or Section 4975 of the Internal Revenue Code of 1986, as amended (the "Code") (each, a "Benefit Plan Investor"), by accepting this material such Benefit Plan Investor will be deemed to have represented, warranted and acknowledged that (1) the Benefit Plan Investor is represented by a fiduciary that is independent of Goldman Sachs and its affiliates (the "Independent Fiduciary"), (2) the Independent Fiduciary is a bank (as defined in section 202 of the Investment Advisers Act of 1940 (the "Advisers Act")) or a similar institution that is regulated and supervised and subject to periodic examination by a State or Federal agency; an insurance carrier which is qualified under the laws of more than one State to perform the services of managing, acquiring or disposing of assets of a plan; an investment adviser registered under the Advisers Act or, if not registered as an investment adviser under the Advisers Act by reason of paragraph (1) of section 203A, is registered as an investment adviser under the laws of the State in which it maintains its principal office and place of business; a broker-dealer registered under the Securities Exchange Act of 1934; or an Independent Fiduciary that holds or has under management or control total assets of at least \$50 Million; (3) the Independent Fiduciary is capable of evaluating investment risks independently, both in general and with regard to the information contained in this material; (4) the Independent Fiduciary is a fiduciary under ERISA and/or the Code with respect to, and is responsible for exercising independent judgment in evaluating, the information contained in this material; (5) neither Goldman Sachs nor its affiliates are undertaking to provide impartial investment advice, or to give advice in a fiduciary capacity, in connection with the information contained in this material or with respect to any Benefit Plan Investor's subsequent investment decisions; and (6) any financial interest of Goldman Sachs and its affiliates is or has been disclosed. To the extent this material is provided to any

other recipient, this material is provided solely on the basis that the recipient has the capability to independently evaluate investment risk and is exercising independent judgment in evaluating investment decisions in that its investment decisions will be based on its own independent assessment of the opportunities and risks presented by a potential investment, market factors and other investment considerations.

Not a Municipal Advisor: Except in circumstances where Goldman Sachs expressly agrees otherwise in writing, Goldman Sachs is not acting as a municipal advisor and the opinions or views contained herein are not intended to be, and do not constitute, advice, including within the meaning of Section 15B of the Securities Exchange Act of 1934.

Phone recording: Telephone conversations with Goldman Sachs personnel may be recorded and retained.

Legal Entities Disseminating this Material: This material is disseminated in Australia by Goldman Sachs Australia Pty Ltd (ABN 21 006 797 897); in Canada by either Goldman Sachs Canada Inc. or Goldman Sachs & Co. LLC; in Hong Kong by Goldman Sachs(Asia) L.L.C. or by Goldman Sachs Asia Bank Limited, a restricted licence bank; in Japan by Goldman Sachs Japan Co.,Ltd.; in the Republic of Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch; in New Zealand by Goldman Sachs New Zealand Limited; in Singapore by Goldman Sachs(Singapore) Pte. (Company Number: 198602165W), by Goldman Sachs Futures Pte.Ltd (Company Number: 199004153Z) or by J.Aron &Company (Singapore) Pte (Company Number:198902119H); in India by Goldman Sachs (India) Securities Private Limited, Mumbai Branch; in the United Kingdom, Belgium, Denmark, Finland, Ireland, Italy, Liechtenstein and Luxembourg by Goldman Sachs International (“GSI”); in the United Kingdom, Belgium, France, Germany, Ireland, Luxembourg and the Netherlands by Goldman Sachs Bank USA, London Branch (Financial Services Register number 582328); in France by Goldman Sachs Paris Inc. et Cie or GSI Paris branch; in Spain by GSI Madrid branch; in Sweden by GSI Stockholm branch; in all European Economic Area jurisdictions by Goldman Sachs Bank Europe SE, including through its authorised branches (“GSBE”); in Switzerland by GSI; in the Cayman Islands by Goldman Sachs (Cayman) Trust, Limited; in Brazil by Goldman Sachs do Brasil Banco Múltiplo S.A.; in South Africa Goldman Sachs International is operating under an exemption in respect of certain clients in terms of the Financial Advisory and Intermediary Services Act (FAIS), and in the United States of America by Goldman Sachs & Co. LLC (which is a member of FINRA, NYSE and SIPC) and by Goldman Sachs Bank USA. You may obtain information about SIPC, including the SIPC brochure, by contacting SIPC (website: <http://www.sipc.org/>; phone: 202-371-8300). GSI, which is authorised by the Prudential Regulation Authority (“PRA”) and regulated by the Financial Conduct Authority (“FCA”) and the PRA, has approved this material in connection with its distribution in the United Kingdom. GSI, whose registered office is at Plumtree Court, 25 Shoe Lane, London EC4A 4AU, appears in the FCA’s Register (Registration No.: 142888). GSI is registered as a Private Unlimited Company in England and Wales (Company Number: 2263951) and its VAT registration number is GB 447 2649 28. GSI is subject to the FCA and PRA rules and guidance, details of which can be found on the websites of the FCA and PRA at www.fca.org.uk and www.bankofengland.co.uk/pr. The FCA is located at 12 Endeavour Square, London E20 1JN, and the PRA is located at Bank of England, 20 Moorgate, London EC2R 6DA. GSBE is a credit institution incorporated in Germany and, within the Single Supervisory Mechanism established between those Member States of the European Union whose official currency is the Euro, subject to direct prudential supervision by the European Central Bank and in other respects supervised by German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin) and Deutsche Bundesbank. Unless governing law permits otherwise, you must contact a Goldman Sachs entity in your home jurisdiction if you want to use our services in effecting a transaction in the securities mentioned in this material. This material is not for distribution to retail clients, as that term is defined under The European Union Markets in Financial Instruments Directive(2014/65/EU) (including as implemented in the United Kingdom), and any investments, including derivatives, mentioned in this material will not be made available by us to any such retail client.

Reproduction and Re-Distribution: Without our prior written consent, no part of this material may be (i) copied, photocopied or duplicated in any form by any means or (ii) redistributed. Notwithstanding anything herein to the contrary, and except as required to enable compliance with applicable securities law, you (and each of your employees, representatives and other agents) may disclose to any and all persons the U.S. federal income and state tax treatment and tax structure of the transaction and all materials of any kind (including tax opinions and other tax analyses) that are provided to you relating to such tax treatment and tax structure, without Goldman Sachs imposing any limitation of any kind.

Information Not for Further Dissemination: To the extent this communication contains Goldman Sachs' pricing information, such pricing information is proprietary and/or confidential and is provided solely for the internal use of the intended recipient(s). You are notified that any unauthorized use, dissemination, distribution or copying of this communication or its contents, including pricing information, in whole or in part, is strictly prohibited. Further, unless prohibited by local law, any use, review or acceptance of this information is subject to and manifests your agreement with Goldman Sachs to use such information only in accordance with the terms set forth above. Goldman Sachs has caused its proprietary information to be delivered to you in reliance upon such agreement.

Not a Valuation: Values herein are not customer valuations and should not be used in lieu of a customer valuation statement or account statement. These values may not reflect the value of the positions carried on the books and records of Goldman Sachs or its affiliates and should not be relied upon for the maintenance of your books and records or for any tax, accounting, legal or

other purposes. The information provided herein does not supersede any customer statements, confirmations or other similar notifications.

Receipt of Orders: An order sent to Goldman Sachs by email or instant message is not deemed to be received by Goldman Sachs until a Goldman Sachs representative verifies the order details with a phone call to the client or acknowledges receipt of the order via email or instant message to the client. Goldman Sachs does not accept client orders sent via fax or voicemail systems.

Indicative Terms/Pricing Levels: This material may contain indicative terms only, including but not limited to pricing levels. There is no representation that any transaction can or could have been effected at such terms or prices. Proposed terms and conditions are for discussion purposes only. Finalized terms and conditions are subject to further discussion and negotiation.

Order Handling Practices for Listed and Over-the-Counter Derivatives: While the firm is holding your derivative (e.g. options, convertible bonds, warrants or preferred shares) order, the firm or its clients may engage in trading activity in the same or related products, including transactions in the underlying securities. While such trading activity is unrelated to your order, it may coincidentally impact the price of the derivative that you are buying or selling.

OTC Derivatives Risk Disclosures:

Terms of the Transaction: To understand clearly the terms and conditions of any OTC derivative transaction you may enter into, you should carefully review the Master Agreement, including any related schedules, credit support documents, addenda and exhibits. You should not enter into OTC derivative transactions unless you understand the terms of the transaction you are entering into as well as the nature and extent of your risk exposure. You should also be satisfied that the OTC derivative transaction is appropriate for you in light of your circumstances and financial condition. You may be requested to post margin or collateral to support written OTC derivatives at levels consistent with the internal policies of Goldman Sachs.

Liquidity Risk: There is no public market for OTC derivative transactions and, therefore, it may be difficult or impossible to liquidate an existing position on favorable terms. **Transfer Restrictions:** OTC derivative transactions entered into with one or more affiliates of The Goldman Sachs Group, Inc. (Goldman Sachs) cannot be assigned or otherwise transferred without its prior written consent and, therefore, it may be impossible for you to transfer any OTC derivative transaction to a third party.

Conflict of Interests: Goldman Sachs may from time to time be an active participant on both sides of the market for the underlying securities, commodities, futures, options or any other derivative or instrument identical or related to those mentioned herein (together, "the Product"). Goldman Sachs at any time may have long or short positions in, or buy and sell Products (on a principal basis or otherwise) identical or related to those mentioned herein. Goldman Sachs hedging and trading activities may affect the value of the Products.

Counterparty Credit Risk: Because Goldman Sachs, may be obligated to make substantial payments to you as a condition of an OTC derivative transaction, you must evaluate the credit risk of doing business with Goldman Sachs or its affiliates.

Pricing and Valuation: The price of each OTC derivative transaction is individually negotiated between Goldman Sachs and each counterparty and Goldman Sachs does not represent or warrant that the prices for which it offers OTC derivative transactions are the best prices available, possibly making it difficult for you to establish what is a fair price for a particular OTC derivative transaction; The value or quoted price of the Product at any time, however, will reflect many factors and cannot be predicted. If Goldman Sachs makes a market in the offered Product, the price quoted by Goldman Sachs would reflect any changes in market conditions and other relevant factors, and the quoted price (and the value of the Product that Goldman Sachs will use for account statements or otherwise) could be higher or lower than the original price, and may be higher or lower than the value of the Product as determined by reference to pricing models used by Goldman Sachs. If at any time a third party dealer quotes a price to purchase the Product or otherwise values the Product, that price may be significantly different (higher or lower) than any price quoted by Goldman Sachs. Furthermore, if you sell the Product, you will likely be charged a commission for secondary market transactions, or the price will likely reflect a dealer discount. Goldman Sachs may conduct market making activities in the Product. To the extent Goldman Sachs makes a market, any price quoted for the OTC derivative transactions, Goldman Sachs may differ significantly from (i) their value determined by reference to Goldman Sachs pricing models and (ii) any price quoted by a third party. The market price of the OTC derivative transaction may be influenced by many unpredictable factors, including economic conditions, the creditworthiness of Goldman Sachs, the value of any underlyers, and certain actions taken by Goldman Sachs.

Market Making, Investing and Lending: Goldman Sachs engages in market making, investing and lending businesses for its own account and the accounts of its affiliates in the same or similar instruments underlying OTC derivative transactions (including such trading as Goldman Sachs deems appropriate in its sole discretion to hedge its market risk in any OTC derivative transaction whether between Goldman Sachs and you or with third parties) and such trading may affect the value of an OTC

derivative transaction.

Early Termination Payments: The provisions of an OTC Derivative Transaction may allow for early termination and, in such cases, either you or Goldman Sachs may be required to make a potentially significant termination payment depending upon whether the OTC Derivative Transaction is in-the-money to Goldman Sachs or you at the time of termination. Indexes: Goldman Sachs does not warrant, and takes no responsibility for, the structure, method of computation or publication of any currency exchange rates, interest rates, indexes of such rates, or credit, equity or other indexes, unless Goldman Sachs specifically advises you otherwise.

Risk Disclosure Regarding futures, options, equity swaps, and other derivatives as well as non-investment-grade securities and ADRs: Please ensure that you have read and understood the current options, futures and security futures disclosure document before entering into any such transactions. Current United States listed options, futures and security futures disclosure documents are available from our sales representatives or at <http://www.theocc.com/components/docs/riskstoc.pdf>, <http://www.goldmansachs.com/disclosures/risk-disclosure-for-futures.pdf> and <https://www.nfa.futures.org/investors/investor-resources/files/security-futures-disclosure.pdf>, respectively. Certain transactions - including those involving futures, options, equity swaps, and other derivatives as well as non-investment-grade securities - give rise to substantial risk and are not available to nor suitable for all investors. If you have any questions about whether you are eligible to enter into these transactions with Goldman Sachs, please contact your sales representative. Foreign-currency-denominated securities are subject to fluctuations in exchange rates that could have an adverse effect on the value or price of, or income derived from, the investment. In addition, investors in securities such as ADRs, the values of which are influenced by foreign currencies, effectively assume currency risk.

Notice to Australian Investors: When this document is disseminated in Australia by Goldman Sachs & Co. LLC ("GSCO"), Goldman Sachs International ("GSI"), Goldman Sachs (Asia) L.L.C. ("GSALLC"), or Goldman Sachs (Singapore) Pte ("GSSP") (collectively the "GS entities"), this document, and any access to it, is intended only for a person that has first satisfied the GS entities that:

- the person is a Sophisticated or Professional Investor for the purposes of section 708 of the Corporations Act of Australia; and
- the person is a wholesale client for the purpose of section 761G of the Corporations Act of Australia. To the extent that the GS entities are providing a financial service in Australia, the GS entities are each exempt from the requirement to hold an Australian financial services license for the financial services they provide in Australia. Each of the GS entities are regulated by a foreign regulator under foreign laws which differ from Australian laws, specifically:
 - GSCO is regulated by the US Securities and Exchange Commission under US laws;
 - GSI is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, under UK laws;
 - GSALLC is regulated by the Hong Kong Securities and Futures Commission under Hong Kong laws; and
 - GSSP is regulated by the Monetary Authority of Singapore under Singapore laws.

Notice to Brazilian Investors

Marquee is not meant for the general public in Brazil. The services or products provided by or through Marquee, at any time, may not be offered or sold to the general public in Brazil. You have received a password granting access to Marquee exclusively due to your existing relationship with a GS business located in Brazil. The selection and engagement with any of the offered services or products through Marquee, at any time, will be carried out directly by you. Before acting to implement any chosen service or products, provided by or through Marquee you should consider, at your sole discretion, whether it is suitable for your particular circumstances and, if necessary, seek professional advice. Any steps necessary in order to implement the chosen service or product, including but not limited to remittance of funds, shall be carried out at your discretion. Accordingly, such services and products have not been and will not be publicly issued, placed, distributed, offered or negotiated in the Brazilian capital markets and, as a result, they have not been and will not be registered with the Brazilian Securities and Exchange Commission (Comissão de Valores Mobiliários), nor have they been submitted to the foregoing agency for approval. Documents relating to such services or products, as well as the information contained therein, may not be supplied to the general public in Brazil, as the offering of such services or products is not a public offering in Brazil, nor used in connection with any offer for subscription or sale of securities to the general public in Brazil.

The offer of any securities mentioned in this message may not be made to the general public in Brazil. Accordingly, any such securities have not been nor will they be registered with the Brazilian Securities and Exchange Commission (Comissão de Valores Mobiliários) nor has any offer been submitted to the foregoing agency for approval. Documents relating to the offer, as well as the information contained therein, may not be supplied to the public in Brazil, as the offer is not a public offering of securities in Brazil. These terms will apply on every access to Marquee.

Canal de Comunicação com o Público Goldman Sachs Brasil: 0800 380 5764 e/ou contatogoldmanbrasil@gs.com.
Horário de funcionamento: segunda-feira à sexta-feira (exceto feriados), das 9h às 18h. Canal de Denúncias: 0800 047 4065

April 2022

e/ou Formulário eletrônico: <https://gs.tnwreports.com/> Public Communication Channel Goldman Sachs Brazil: 0800 380 5764 and/or contatogoldmanbrasil@gs.com. Available Weekdays (except holidays), from 9am to 6pm. Business Integrity Issues Channel: 0800 047 4065 and/or Web Form: <https://gs.tnwreports.com/>

Note to Investors in Israel: GS is not licensed to provide investment advice or investment management services under Israeli law.

Notice to Investors in Japan

Marquee is made available in Japan by Goldman Sachs Japan Co., Ltd.

本書は情報の提供を目的としております。また、売却・購入が違法となるような法域での有価証券その他の売却若しくは購入を勧めるものでもありません。ゴールドマン・サックスは本書内の取引又はストラクチャーの勧誘を行うものではないと考えています。これらの取引又はストラクチャーは、社内及び法規制等の承認等次第で実際にはご提供できない場合がございます。

<適格機関投資家限定 転売制限>

ゴールドマン・サックス証券株式会社が適格機関投資家のみを相手方として取得申込みの勧誘（取得勧誘）又は売付けの申込み若しくは買付けの申込みの勧誘（売付け勧誘等）を行う本有価証券には、適格機関投資家に譲渡する場合以外の譲渡が禁止される旨の制限が付されています。本有価証券は金融商品取引法第4条に基づく財務局に対する届出が行われておりません。なお、本告知はお客様によるご同意のもとに、電磁的に交付させていただいております。

<適格機関投資家用資料>

本資料は、適格機関投資家のお客さまのみを対象に作成されたものです。本資料における金融商品は適格機関投資家のお客さまのみがお取引可能であり、適格機関投資家以外のお客さまからのご注文等はお受けできませんので、ご注意ください。商号等/ゴールドマン・サックス証券株式会社 金融商品取引業者 関東財務局長（金商）第69号 加入協会/ 日本証券業協会、一般社団法人金融先物取引業協会、一般社団法人第二種金融商品取引業協会、一般社団法人投資信託協会、一般社団法人日本投資顧問業協会 本書又はその添付資料に信用格付が記載されている場合、日本格付研究所（JCR）及び格付投資情報センター（R&I）による格付は、登録信用格付業者による格付（登録格付）です。その他の格付は登録格付である旨の記載がない場合は、無登録格付です。無登録格付を投資判断に利用する前に、「無登録格付に関する説明書」（<http://www.goldmansachs.com/disclaimer/ratings.html>）を十分にお読みください。

If any credit ratings are contained in this material or any attachments, those that have been issued by Japan Credit Rating Agency, Ltd. (JCR) or Rating and Investment Information, Inc. (R&I) are credit ratings that have been issued by a credit rating agency registered in Japan (registered credit ratings). Other credit ratings are unregistered unless denoted as being registered. Before using unregistered credit ratings to make investment decisions, please carefully read "Explanation Regarding Unregistered Credit Ratings" (<http://www.goldmansachs.com/disclaimer/ratings.html>).

Notice to Mexican Investors: Information contained herein is not meant for the general public in Mexico. The services or products provided by or through Goldman Sachs Mexico, Casa de Bolsa, S.A. de C.V. (GS Mexico) may not be offered or sold to the general public in Mexico. You have received information herein exclusively due to your existing relationship with a GS Mexico or any other Goldman Sachs business. The selection and engagement with any of the offered services or products through GS Mexico will be carried out directly by you at your own risk. Before acting to implement any chosen service or product provided by or through GS Mexico you should consider, at your sole discretion, whether it is suitable for your particular circumstances and, if necessary, seek professional advice. Information contained herein related to GS Mexico services or products, as well as any other information, shall not be considered as a product coming from research, nor it contains any recommendation to invest, not to invest, hold or sell any security and may not be supplied to the general public in Mexico.

Notice to New Zealand Investors: When this document is disseminated in New Zealand by Goldman Sachs & Co. LLC ("GSCO"), Goldman Sachs International ("GSI"), Goldman Sachs (Asia) L.L.C. ("GSALLC") or Goldman Sachs (Singapore) Pte ("GSSP") (collectively the "GS entities"), this document, and any access to it, is intended only for a person that has first satisfied; the GS entities that the person is someone:

- (i) who is an investment business within the meaning of clause 37 of Schedule 1 of the Financial Markets Conduct Act 2013 (New Zealand) (the "FMC Act");
- (ii) who meets the investment activity criteria specified in clause 38 of Schedule 1 of the FMC Act;
- (iii) who is large within the meaning of clause 39 of Schedule 1 of the FMC Act; or
- (iv) is a government agency within the meaning of clause 40 of Schedule 1 of the FMC Act. No offer to acquire the interests is being made to you in this document. Any offer will only be made in circumstances where disclosure is not

April 2022

required under the Financial Markets Conducts Act 2013 or the Financial Markets Conduct Regulations 2014.

Notice to Swiss Investors: This is marketing material for financial instruments or services. The information contained in this material is for general informational purposes only and does not constitute an offer, solicitation, invitation or recommendation to buy or sell any financial instruments or to provide any investment advice or service of any kind.

Notice to Investors in Korea: Marquee is made available in Korea by Goldman Sachs (Asia) L.L.C. Seoul Branch. The information contained in this document does not constitute, and is not intended to constitute, a public offer of securities in the United Arab Emirates in accordance with the Commercial Companies Law (Federal Law no. 2 of 2015), ESCA Board of Directors' Decision no. (9/r.m.) of 2016, ESCA Chairman Decision no 3/r.m. of 2017 concerning promoting and introducing regulations or otherwise under the laws of the United Arab Emirates. Accordingly, the interests in the securities may not be offered to the public in the UAE (including the Dubai International Financial Centre and the Abu Dhabi Global Market). This document has not been approved by, or filed with the Central Bank of the United Arab Emirates, the Securities and Commodities Authority, the Dubai Financial Services Authority, the Financial Services Regulatory Authority or any other relevant licensing authorities in the United Arab Emirates. If you do not understand the contents of this document, you should consult with a financial advisor. This document is provided to the recipient only and should not be provided to or relied on by any other person.

© 2025 Goldman Sachs. All rights reserved.