DODD-FRANK SWAP DEALER DISCLOSURES AND NOTIFICATIONS

The following disclosures and notifications are provided to you in accordance with the requirements set forth in Part 23 of the CFTC Regulations in connection with any transactions in Swaps between you and any of the below Goldman Sachs entities, each of which has been registered as a swap dealer with the CFTC in accordance with the CEA and applicable regulations of the CFTC (each a “Swap Dealer”). The definitions for terms used in this document are contained in Part II below.

- Goldman Sachs Bank USA,
- Goldman Sachs & Co. LLC,
- Goldman Sachs International,
- J. Aron & Company LLC,
- Goldman Sachs Financial Markets, L.P.,
- Goldman Sachs Mitsui Marine Derivative Products, L.P.,
- Goldman Sachs Japan Co., Ltd.,
- Goldman Sachs Paris Inc. et Cie,
- Goldman Sachs Financial Markets Pty. Ltd.,
- J. Aron & Company (Singapore) Pte.,
- Goldman Sachs Mexico, Casa de Bolsa, S.A. de C.V.,
- Goldman Sachs AG, and
- Goldman Sachs Europe SE.

I. DISCLOSURES AND NOTIFICATIONS

(Please note that some of the below disclosures and/or notifications may not apply to you if you are not a U.S. person as defined in the CFTC’s Interpretive Guidance and are transacting with any Swap Dealer organized outside the United States.)

A. Material Risks

Please see the “ISDA General Disclosure Statement for Transactions” under the “General Disclosures” tab as well as the ISDA and other disclosures contained under the “Product Specific Disclosures” tab for material risks related to Swaps by product required to be provided to you pursuant to CFTC Regulation 23.431(a)(1).
B. **Material Economic Terms**

Please see the “Product Specific Disclosures” tab for the material economic terms (“MET”) of Swaps required to be provided to you pursuant to CFTC Regulation 23.431(a)(2). The MET templates contained under the “Product Specific Disclosures” tab are subject to and incorporate (i) the relevant ISDA master agreement and Credit Support Annex, if any, or such other master trading agreement and related collateral agreement(s), if any, as previously executed between the parties, (ii) the relevant master-master netting or portfolio netting agreements, if any, as previously executed between the parties, and (iii) any relevant prime brokerage execution or give-up compensation agreement, master confirmation agreement, trading convention side letter or other similar agreement in writing between the parties.

Each of the MET templates for the products specified under the “Product Specific Disclosures” tab describing a transaction that if executed between you and Swap Dealer would be subject to a mandatory clearing requirement under the CEA shall be deemed to provide that such transaction be submitted for clearing to the registered derivatives clearing organization as agreed between you and us.

C. **Material Conflicts of Interest**

Please see Annex A for disclosures related to some of the material conflicts of interest that may arise between you and Swap Dealer where Swap Dealer performs services for you with respect to futures, options on futures, Swaps, forwards or other commodity derivatives (“Contracts”), which are required to be provided to you pursuant to CFTC Regulation 23.431(a)(3).

D. **Pre-Trade Mid-Market Mark Methodology**

Please see Annex B for disclosures related to the methodology used by Swap Dealer in providing you with pre-trade mid-market marks as required pursuant to CFTC Regulation 23.431(a)(3).

E. **Scenario Analyses**

With respect to each Swap between you and Swap Dealer that is not “available for trading” (as that phrase is used in the CFTC Regulations), prior to a Swap Transaction Event you may request, and consult on the design of, a scenario analysis to allow you to assess your potential exposure in connection with such Swap in accordance with CFTC Regulation 23.431(b).
F. **Daily Marks**

1. We are required to provide daily marks to you in accordance with CFTC Regulation 23.431(d)(2) (“DF daily mark”) only in respect of uncleared Swaps. For cleared Swaps originally executed between you and Swap Dealer, you have the right, upon request, to receive a DF daily mark from the FCM through which you clear such cleared Swap or the relevant DCO or another third party in accordance with CFTC Regulation 23.431(d)(1).

2. Any DF daily mark we provide to you may not necessarily, and would often not be expected to be a price at which either we or you would agree to replace or terminate a Swap; include adjustments you need to make internally to account for your credit reserves, funding or liquidity costs; unless otherwise expressly agreed, be the basis for margin calls and maintenance of collateral; or be the value of the Swap that is marked on our books and records.

3. Pursuant to Section 4s(h)23.431(d) of the CEA, the DF daily mark is exclusive of several additional factors that may influence our pricing of Swaps, namely, profit, credit reserves, hedging costs, funding and liquidity or any other costs or adjustments.

4. DF daily marks take into account unsettled cash payments due from one party to the other. DF daily marks are provided only in respect of Swap transactions which have not terminated or been novated or otherwise transferred to a third party, notwithstanding any unsettled cash payments that may remain in respect of such a terminated, novated or otherwise transferred Swap transaction.

5. DF daily marks are not provided in respect of your entire portfolio. No DF daily mark is provided in respect of any Swap transactions with a Goldman Sachs affiliate that is not a Swap Dealer or in respect of any derivatives transaction that it not regulated by the CFTC.

6. Unless otherwise agreed with Swap Dealer in writing, any DF daily marks provided by Swap Dealer to you will be calculated by Swap Dealer as of the close of business on the prior Business Day in the locality specified by Swap Dealer in its notice of such DF daily mark to you, such locality to be consistently specified with regard to a class or type of Swaps. Also, each DF daily mark will be expressed in terms of a position of a specified size, and will be applicable only with respect to that size and may not reflect the mark that would be calculated in respect of a position or transaction of any other size.

7. For additional disclosures on the methodology and assumptions we use to prepare the DF daily marks, please see Annex C.
G. **Clearing**

1. With respect to any Swap entered into between you and Swap Dealer that is subject to the mandatory clearing requirements under Section 2(h) of the CEA, you have the sole right to select the DCO at which the Swap will be cleared in accordance with CFTC Regulation 23.432(a).

2. With respect to any Swap entered into between you and Swap Dealer that is not subject to the mandatory clearing requirements under Section 2(h) of the CEA, you may elect to clear such Swap and you have the sole right to select the DCO at which the Swap will be cleared in accordance with CFTC Regulation 23.432(b).

3. The decision by the clearing unit of Swap Dealer or of any affiliated clearing member of a DCO to provide Swaps clearing services to you is determined based on some or all of the following criteria: (i) your credit profile, (ii) your capital and other financial resources, (iii) your expertise in trading complex financial products, including Swaps, (iv) your operational, liquidity and risk management capabilities in trading financial products, including Swaps, (v) the types of Swaps that you intend to trade and clear at the clearing unit of Swap Dealer or any affiliate thereof, (vi) whether the clearing unit of Swap Dealer or any affiliate thereof has the ability to clear the Swaps you are intending to trade, (vii) whether commercial and legal terms can be agreed with you, (viii) the approach you take to legal and compliance issues, (ix) your satisfaction of the client on-boarding requirements of the clearing unit of Swap Dealer or its affiliates, (x) credit exposure, capital and other financial resources/condition of the clearing unit of Swap Dealer or its affiliates, and (xi) any other relevant objective considerations.

H. **Special Entity Status**

If you are an employee benefit plan defined in Section 3 of ERISA that is not subject to Title I of ERISA, you may elect to be treated as a special entity pursuant to CFTC Regulation 23.430(c).

I. **Recommendations**

As of each Swap Communication Event, Swap Dealer discloses to you in accordance with CFTC Regulation 23.434(b)(3) that (a) Swap Dealer is not undertaking to act in your best interests and (b) Swap Dealer is acting in its capacity as a counterparty and is not undertaking to assess the suitability of any Swap or trading strategy involving a Swap for you.

J. **Segregation of Initial Margin**

If you supply funds or other property to Swap Dealer to margin, guarantee, or secure your obligations to Swap Dealer under an uncleared Swap, you have the right in accordance with
CFTC Regulation 23.701(a)(1) to require segregation of those funds or other property other than with respect to variation margin payments. This notification is deemed to be effective prior to execution of the first uncleared swap transaction. Please contact your Goldman Sachs sales representative if you would like further information on how to make this election.

K. **Variation Margin Calculation Methodology Overview**

In accordance with CFTC Rule §23.155(b)(1), an overview of the methodology to calculate a reasonable approximation of the variation margin requirement used by Swap Dealer is available to you upon request. Please contact your Goldman Sachs sales representative if you would like further information.

L. **Address for Complaints**

Set forth below for each Swap Dealer are the physical address, email, and telephone number of the department to which any complaints may be directed:

*Goldman Sachs Bank USA*
*Goldman Sachs & Co. LLC*
*J. Aron & Company LLC*
*Goldman Sachs Financial Markets, L.P.*
*Goldman Sachs Mitsui Marine Derivative Products, L.P.*

Address for complaints:
Attn: SLC-Compliance
222 South Main Street, 10th Floor
Salt Lake City, UT 84101
Telephone: 1-800-324-2895
E-mail: gs-complaints-americas@gs.com

*Goldman Sachs International*

Address for complaints:
Attn: GSI-Compliance
Plumtree Court, 25 Shoe Lane
London EC4A 4AU United Kingdom
Telephone: 44-20-7774-1000
E-mail: gs-gsi-cftc-complaints@gs.com

Revised as of December 11, 2019
Goldman Sachs Japan Co., Ltd.
Address for complaints:
Attn: Yuichi Miura, Compliance Officer
Roppongi Hills Mori Tower, 47th floor 10-1
Roppongi 6-chome
Minato-ku, Tokyo 106-6147 Japan
Tel: 81-3-6437-1000
E-mail: gs-gsjcl-cftc-complaints@gs.com

Goldman Sachs Paris Inc. et Cie
Address for complaints:
Attn: Jean-Nicolas Barbier, Compliance Officer
5, Avenue Kleber
75116 Paris, France
Tel: +33-1-4212-1000
Email: gs-gspc-cftc-complaints@gs.com

Goldman Sachs Financial Markets Pty. Ltd.
Address for complaints:
Attn: Keith Birch, Compliance Officer
Level 46, Governor Philip Tower
1 Farrer Place
Sydney, NSW 2000, Australia
Tel: +61-2-9320-1406
Email: gs-gaus-cftc-complaints@gs.com

J. Aron & Company (Singapore) Pte.
Address for complaints:
Attn: Ken Ng, Compliance Officer
1 Raffles Link #07-01, South Lobby
Singapore 039393
Tel: (65) 6889 2399
Email: gs-jasg-cftc-complaints@gs.com

Revised as of December 11, 2019
Goldman Sachs México, Casa de Bolsa, S.A. de C.V.

Address for complaints:
Attn: Alfonso Tena, Compliance Officer
Avenida Prado Sur 250, Piso 1
Colonia Lomas de Chapultepec
Delegación Miguel Hidalgo
Ciudad de México, México 11000
Email: gs-oficial-de-cumplimiento@gs.com

Goldman Sachs Bank Europe SE

Address for complaints:
Attn: Michael Bartsch, Chief Compliance Officer
Marienturm
Taunusanlage 9-10
D – 60329 Frankfurt am Main, Germany
Telephone: +49 69 7532 1000
Email: GSBE-Complaints@gs.com

Goldman Sachs Europe SE

Address for complaints:
Attn: Michael Bartsch, Chief Compliance Officer
Marienturm
Taunusanlage 9-10
D – 60329 Frankfurt am Main, Germany
Telephone: +49 69 7532 1000
Email: GSE-Complaints@gs.com
II. DEFINED TERMS

“Business Day” means a day on which commercial banks are open for general business (including dealings in foreign exchange and foreign currency deposits).

“CEA” means the U.S. Commodity Exchange Act.

“CFTC” means the U.S. Commodity Futures Trading Commission.

“CFTC Regulations” means the rules, regulations, orders and interpretations published or issued by the CFTC.

“DCO” means a “derivatives clearing organization” as such term is defined in Section 1a(15) of the CEA and the CFTC Regulations.


“FCM” means a futures commission merchant subject to regulation under the CEA.

“Interpretive Guidance” means the Interpretive Guidance and Policy Statement Regarding Compliance with Certain Swap Regulations, 78 Fed. Reg. 45292 (July 26, 2013), as amended or supplemented by the CFTC from time to time.

“Swap” means a “swap” as defined in Section 1a(47) of the CEA and CFTC Regulation 1.3. The term “Swap” also includes any foreign exchange swaps and foreign exchange forwards that may be exempted from regulation as “swaps” by the U. S. Secretary of the Treasury pursuant to authority granted by Section 1a(47)(E) of the CEA.

“Swap Communication Event” means, with respect to you and Swap Dealer, each (1) Swap Transaction Event, (2) offer to enter into a Swap Transaction Event, and (3) “recommendation” (as such term is used in CFTC Regulation 23.434 and 23.440) with respect to a Swap or trading strategy involving a Swap.

“Swap Transaction Event” means, with respect to you and Swap Dealer, the execution of a new Swap or any material amendment, mutual unwind or novation of an existing Swap.
MATERIAL CONFLICTS OF INTEREST DISCLOSURE

Some material conflicts of interest may arise between you and Swap Dealer where Swap Dealer performs services for you with respect to futures, options on futures, swaps (as defined in the CEA), forwards or other commodity derivatives (“Contracts”). Conflicts of interests can arise in particular when Swap Dealer has an economic or other incentive to act, or persuade you to act, in a way that favors Swap Dealer or its affiliates.

Under applicable law, including regulations of the CFTC, not all Swaps are required to be executed on an exchange or swap execution facility (each, a “Trading Facility”), even if a Trading Facility lists the Swap for trading. In such circumstances, it may be financially advantageous for Swap Dealer or its affiliate to execute a Swap with you bilaterally in the over-the-counter market rather than on a Trading Facility and, to the extent permitted by applicable law, we may have an incentive to persuade you to execute your Swap bilaterally.

Applicable law may permit you to choose the CFTC-registered DCO to which you submit a Swap for clearing. You should be aware that Swap Dealer may not be a member of, or may not otherwise be able to submit your Swap to, the DCO of your choice. Swap Dealer consequently may have an incentive to persuade you to use a DCO of which it or its affiliate is a member.

You also should be aware that Swap Dealer or an affiliate may own stock in, or have some other form of ownership interest in, one or more U.S. or foreign Trading Facilities or DCOs where your transactions in Contracts may be executed and/or cleared. As a result, Swap Dealer or an affiliate may receive financial or other benefits related to its ownership interest when Contracts are executed on a given Trading Facility or cleared through a given DCO, and Swap Dealer would, in such circumstances, have an incentive to cause Contracts to be executed on that Trading Facility or cleared by that DCO. In addition, directors, officers and employees of Swap Dealer or an affiliate may also serve on the board of directors or on one or more committees of a Trading Facility or DCO.

In addition, Trading Facilities and DCOs may from time to time have in place other arrangements that provide their members or participants with volume, market-making or other discounts or credits, may call for members or participants to pre-pay fees based on volume thresholds, or may provide other incentives or arrangements that are intended to encourage market participants to trade on, or direct trades to, that Trading Facility or DCO. Swap Dealer or an affiliate may participate in and obtain financial benefits from such incentive programs.

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When Swap Dealer provides execution services to you (either in conjunction with clearing services or in an execution-only capacity), Swap Dealer may direct orders to affiliated or unaffiliated market-makers, other executing firms, individual brokers or brokerage groups for execution. When such affiliated or unaffiliated parties are used, they may, where permitted, agree to price concessions, volume discounts or refunds, rebates or similar payments in return for receiving such business. Likewise, where permitted by law and the rules of the applicable Trading Facility, Swap Dealer or an affiliate may solicit a counterparty to trade opposite your order or enter into transactions for its own account or the account of other counterparties that may, at times, be adverse to your interests in a Contract. In such circumstances, that counterparty may make payments and/or pay a commission to Swap Dealer or an affiliate in connection with that transaction. The results of your transactions may differ significantly from the results achieved by Swap Dealer for its own account, its affiliates, or for other customers.

In addition, where permitted by applicable law (including, where applicable, the rules of the applicable Trading Facility), Swap Dealer, its directors, officers, employees and affiliates may act on the other side of your order or transaction by the purchase or sale for an account, or the execution of a transaction with a counterparty, in which Swap Dealer or a person affiliated with Swap Dealer has a direct or indirect interest, or may affect any such order with a counterparty that provides Swap Dealer or its affiliates with discounts related to fees for Contracts or other products. In cases where Swap Dealer has offered you a discounted commission or clearing fee for Contracts executed through it as agent or with it or its affiliate acting as counterparty, Swap Dealer or its affiliates may be doing so because of the enhanced profit potential resulting from acting as executing broker or counterparty.

Swap Dealer or its affiliates may act as, among other things, an investor, research provider, placement agent, underwriter, distributor, remarketing agent, structurer, securitizer, lender, investment manager, investment adviser, commodity trading advisor, municipal advisor, market maker, trader, prime broker or clearing broker. In those and other capacities, Swap Dealer, its directors, officers, employees and affiliates may take or hold positions in, or advise other customers and counterparties concerning, or publish research or express a view with respect to, a Contract or a related financial instrument that may be the subject of advice from Swap Dealer or its affiliates to you. Any such positions and other advice may not be consistent with, or may be contrary to, your interests or to positions that are the subject of advice previously provided by Swap Dealer or its affiliate to you, and unless otherwise disclosed in writing, Swap Dealer or its affiliate are not necessarily acting in your best interest and are not assessing the suitability for you of any Contract or related financial instrument. Swap Dealer or its affiliates may also facilitate the activities of other counterparties, or hedge transactions it has entered into with other counterparties, which transactions may have adverse effects on the value of the assets underlying any Swap entered into between you and Swap Dealer. Acting in one or more of the capacities noted above may give Swap Dealer or its affiliates access to information relating to markets, investments and products. As a result, Swap Dealer or any of its affiliates may be in possession of information which, if known to you, might cause you to seek to dispose of, retain or increase your position in one or more Contracts or other financial instruments. Swap Dealer and its affiliates will be under no duty to make any such information available to you, except to the extent we have agreed in writing or as may be required under applicable law.
PRE-TRADE MID-MARKET MARK DISCLOSURE

The “pre-trade mid-market mark” (“DF mid”) that is required to be provided to you in accordance with CFTC Regulation 23.431(a)(3) for a Swap is prepared by discounting projected future cashflows of the swap to arrive at a current value. For each asset class, spot and forward curves, correlation and volatility levels are determined on the basis of observable market inputs when available and on the basis of estimates when observable market inputs are not available. These spot and forward curves, correlation and volatility levels are used to estimate future cashflows that are not certain (for example floating interest rates or options). In some cases, we may use probabilistic models to determine the expected value of future cashflows. These estimated cashflows, along with future cashflows that are known with certainty, are then discounted to their present value using discount factors derived from relevant market inputs.

Unless otherwise specified, the discounting rate used for FX Swaps, single-currency interest rate swaps, multi-currency interest rate swaps and interest rate swaps in currencies determined to have insufficient liquidity is either the USD-Overnight Index Swap (“OIS”) rate or OIS rate for the relevant currency, and LIBOR for all other Swaps.

In our sole discretion, we may use a variety of methodologies to prepare the estimated cashflows described above, including without limitation, preparing Monte Carlo simulations, utilizing Black-Scholes, or other mathematical pricing models. In our sole discretion, we may vary the inputs used in such simulations and modeling, and we are under no obligation to disclose to you the methodology used or the inputs thereto.

Any DF mid we provide to you may not necessarily, and would often not be expected to be a price at which either we or you would agree to enter into or terminate a Swap; include adjustments you need to make internally to account for your credit reserves, funding or liquidity costs; unless otherwise expressly agreed, be the basis for margin calls and maintenance of collateral; or be the value of the Swap that is marked on our books and records.

Pursuant to Section 4s(h)23.431(d) of the CEA, the DF mid is exclusive of several additional factors that may influence our pricing of Swaps, namely, profit, credit reserves, hedging costs, funding and liquidity or any other costs or adjustments.

Any DF mid we provide to you is time-sensitive and only current as of the time at which it is provided to you. As a result, the DF mid you receive for a transaction may change with the passage of time even if the price at which we would agree to enter into or terminate such Swap has not changed over the same period of time. No DF mid is provided in respect of any Swap transaction with a Goldman Sachs affiliate that is not a Swap Dealer or in respect of any derivative transaction that is not regulated by the CFTC.
DF DAILY MARK METHODOLOGY DISCLOSURE

The daily mark for each uncleared Swap that is required to be provided to you in accordance with CFTC Regulation 23.431(d)(2) (“DF daily mark”) is prepared by discounting projected future cashflows of the Swap to arrive at a current value. For each asset class, spot and forward curves, correlation and volatility levels are determined on the basis of observable market inputs when available and on the basis of estimates when observable market inputs are not available. These spot and forward curves, correlation and volatility levels are used to estimate future cashflows that are not certain (for example floating interest rates or options). In some cases, we may use probabilistic models to determine the expected value of future cashflows. These estimated cashflows, along with future cashflows that are known with certainty, are then discounted to their present value using discount factors derived from relevant market inputs. Unless otherwise specified, the discounting rate used for FX Swaps, single-currency interest rate swaps, multi-currency interest rate swaps and interest rate swaps in currencies determined to have insufficient liquidity is the Overnight Index Swap (“OIS”) rate for the relevant currency, and LIBOR for all other Swaps.

In our sole discretion, we may use a variety of methodologies to prepare the estimated cashflows described above, including without limitation, preparing Monte Carlo simulations, utilizing Black-Scholes, or other mathematical pricing models. In our sole discretion, we may vary the inputs used in such simulations and modelling, and we are under no obligation to disclose to you the methodology used or the inputs thereto.