

**BENCHMARK STATEMENT**

**PARIS - ALIGNED AND CLIMATE - TRANSITION  
FIXED INCOME INDICES**

**J. P. MORGAN SECURITIES LLC**

**J.P.Morgan**

## BENCHMARK STATEMENT

This benchmark statement is intended to provide details for a group of benchmarks provided by the same administrator and determined from input data of the same nature which provides specific measures of the same or similar market or economic reality. This is a wide definition. Limits on the size of any benchmark family are more likely to be imposed by the requirements of the benchmark methodology and benchmark statement.

**Benchmark Family:** Paris-Aligned and Climate-Transition Fixed Income Indices

**Benchmark Administrator:** J.P. Morgan Securities LLC (**J.P. Morgan**)

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**Categorization:** Paris-Aligned and Climate-Transition Benchmarks

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### 1. Status of this document

This is the **Benchmark Statement** for Global Index Research Group (**GIRG**) indices that are “benchmarks” within the meaning of EU BMR or UK BMR (defined below) for the above Benchmark Family (each a **Benchmark**, and together the **Benchmarks**). This family of Paris-Aligned and Climate-Transition Benchmarks pursues environmental, social and governance (**ESG**) objectives as set out in more detail in this Benchmark Statement and in Appendix 1.

This Benchmark Statement provides an overview of certain key information relating to each Benchmark, as required by either: (1) prior to the end of the “Brexit Transitional Period” (which ended on December 31, 2020) and the EU Benchmarks Regulation (EU) 2016/1011 (**EU BMR**); or (2) following the end of the Brexit Transitional Period and the UK Benchmarks Regulation (**UK BMR**), each of which may be amended from time to time.

This Benchmark Statement applies to all Benchmarks administered by the Benchmark Administrator and included on either the ESMA or the FCA register of benchmarks. Details of the ISINs for Benchmarks in the Benchmark Family, where relevant, are available to users on request to the Benchmark Administrator free of charge at the details specified above.

The Benchmark methodologies (**Benchmark Methodologies**) will be published on J.P. Morgan Markets (**JPMM**) and are supplemented by various **Disclosures**

(including, but limited to, the IOSCO, EU Benchmarks Regulation and UK Benchmarks Regulation Supplemental Disclosure). Further information on such Disclosures, and the Benchmark Administrator's complaints handling and conflict of interest processes, are available here: <http://www.jpmorgan.com/pages/jpmorgan/ib/girg>.

**Nothing contained in this Benchmark Statement should be construed as an offer or solicitation of any transaction.**

This Benchmark Statement will be reviewed and, if necessary, updated at least every two years, but may be updated more frequently in accordance with the requirements of EU BMR and UK BMR.

## **2. Updates and changes to, and cessation of, the Benchmark**

Certain factors, including external factors beyond the control of the Benchmark Administrator, may necessitate changes to, or the cessation of, any of the Benchmarks. Changes to, or the cessation of, any of Benchmarks may have an impact upon any financial instruments or financial contracts that reference those Benchmarks and any investment funds in respect of which the performance is measured by reference to such Benchmarks.

## **3. Input data**

The Benchmark Administrator uses a single contributor, PricingDirect, and WM/Reuters as providers of input data for the determination of the Benchmarks.

WM/Reuters provide spot, forward and non-deliverable foreign exchange benchmark rates.

**PricingDirect**, which is part of the J.P. Morgan group of companies, is a professional valuation vendor that provides valuation services for fixed income securities and derivatives for its clients. The Benchmark Administrator has in place appropriate checks and balances to review the accuracy and data quality of the calculations provided by PricingDirect. Further information on how PricingDirect produces its valuation services is available here: <https://www.pricing-direct.com/pricingdirect/>.

## **4. Market or economic reality measured by each Benchmark and its potential limitations and all key terms**

The Paris-Aligned and Climate-Transition Indices aim to track the performance of the broad fixed income universe of securities available in defined segments of the market, excluding issuers engaged in certain business activities as defined by the the European Commission's Delegated Act (Delegated Act)<sup>1</sup>, as well as adjusting the weights of benchmark securities depending on the absolute greenhouse gas (GHG) emissions of the issuer.

The Paris-Aligned Indices seek at least a 50% absolute GHG emissions reduction compared to the corresponding Parent Index and apply at least a 7% reduction on average per annum. The Climate-Transition Indices seek at least a 30% absolute GHG emissions reduction compared to the corresponding Parent Index and apply at least a 7% reduction on average per annum.

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<sup>1</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R1818&secureweb=prime>  
EU-DOCS45227690.2

The Indices use the 1.5°C temperature scenario, with no or limited overshoot referred to in the Special Report on Global Warming of 1.5 °C from the Intergovernmental Panel on Climate Change (IPCC), as the reference scenario to construct the index methodology.

The Paris-Aligned Indices select, weight and exclude constituents with the aim that the resulting emissions of the remaining underlying constituents as a whole will be aligned with the objectives of the Paris Agreement adopted under the United Nations Framework Convention on Climate Change, ratified by the European Union on 5 October 2016 (the Paris Agreement). The Paris Agreement seeks to limit global warming to well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius.

The Climate-Transition Indices are designed to evaluate the contribution of the underlying constituents to the transition to a low-carbon economy and protect against the transition risks associated with climate change and the transition to a low-carbon economy.

The benchmarks cover a range of market segments, including Emerging market corporate, investment grade and high yield corporate markets.

The benchmark design looks to balance broad coverage of the market segment to ensure representativeness, with adequate liquidity to allow for replicability, so that the benchmark represents an investors' ability to replicate the adjusted economic performance of that market segment.

A set of core attributes are commonly used to assess a security's appropriateness for benchmark eligibility on a monthly basis to align with the representativeness and replicability requirements of the benchmark.

These core attributes include, but are not limited to, the currency of the security, the sector classification and country of risk of the issuer, the rating of the issue, the amount outstanding and maturity of the security, the market of issue and type of investor the security is accessible to and the subordination of the security within the issuers capital structure.

Other attributes can also be incorporated to align the benchmark with the segment of the market the benchmark is looking to represent.

## **5. Limitations of the Benchmark and circumstances in which the measurement of this market or economic reality may become unreliable**

In respect of any calculation day that is not a disrupted day, the applicable calculation entity shall calculate the Benchmark in accordance with the Benchmark Methodology.

In exceptional circumstances involving a *force majeure event* (including, but not limited to, acts of God, acts or regulations of government or other authorities, war, fire, strikes or other industrial disputes, power failure, failure of telecommunication lines, connection or equipment, or failure or defects in any hardware or software owned or supplied by third parties), whereby the Benchmark Administrator is unable to obtain appropriate input data from the relevant source, the Benchmark Administrator may be unable to calculate and publish levels for any Benchmark.

ESG data is sourced from third-party providers and may be subject to change depending on the methodologies of the providers. Additional details on our vendors and methodologies can be found in the J.P. Morgan Paris-Aligned and Climate-Transition Benchmarks methodology document [here](#).

However, regardless of a *force majeure* event occurring, the Benchmark Administrator hereby notifies all users of Benchmarks the possibility that it may discontinue generating any level of a Benchmark at any time and disclaims responsibility for any such disruptions.

The Benchmark is subject to the risks which arise in the markets for the constituents whose performance it reflects, including potential illiquidity of such constituents and the risk of market disruption affecting such constituents. Further, the overall diversification of the Benchmark is potentially limited and may be less diversified than an investment in any fund, investment portfolio or other product which invests in or tracks a diversified investment portfolio, and therefore could experience greater volatility.

Where a GIRG Administrated Index pursues environmental, social or governance (ESG) objectives, the Administrator is, wholly or in part, reliant on public sources of information and other third-party sources. This includes greenhouse gas emissions data for corporates as well as exclusionary screening data. Further, the ability of the Administrator to verify such objectives may be limited by the integrity, quality, and detail of the data available in respect of the underlying constituents at the relevant point in time and the status and evolution of global laws, guidelines, regulations, and market practice in relation to the preparation, tracking and provision of such data. Therefore, such disclosures are made on a commercially reasonable efforts basis and are subject to change. In particular, new laws, guidelines or regulations may be introduced in relation to the methodology used to provide corporate emissions and exclusionary screening data which could impact the Administrator's Paris-Aligned or Climate-Transition Index emissions and the relevant screenings and exclusions and cause them to change. Corporate emissions data and exclusionary screening data may be inconsistent across providers. The Paris-Aligned or Climate-Transition Index emissions, relevant screenings and exclusions and related disclosures are also subject to change as a result of periodic reviews conducted by the Administrator in relation to the sources of ESG data.

In calculating the Benchmark in line with the methodology articulated herein, JPM relies on the data provided by the ESG data providers. JPM does not independently source its own ESG data; however, if a corporate issuer is not covered by the third-party ESG data provider, a rules-based logic based on the third-party vendor data set may be used to estimate emissions (see J.P. Morgan Paris-Aligned and Climate Transition Benchmarks Rules and Methodology for more detail). The integrity of the ESG data sourced from third parties is limited by the ability of those providers to source accurate data on the ESG performance of certain corporate structures, such as parent versus subsidiary, including SPVs, holding company versus operating company and the activities of any affiliated entities and derived structures. Issuers in respect of whom ESG data is limited may still be included in the index.

## **6. Benchmark Methodology**

## 6.1 Rationale for adopting the Benchmark Methodology

The Paris-Aligned and Climate-Transition Benchmarks are rules-based (methodology available [here](#)). The design principles of the Benchmarks are intended to support an accurate and reliable representation of the relevant underlying asset class which the Benchmarks seek to represent and mitigate factors that might result in a distortion of a price, rate, index or value of the Benchmark or one of its constituents.

JPM PAB and JPM CTB Indices are designed to reflect the minimum technical requirements set out by the Delegated Act. JPM PAB and JPM CTB Indices pursue similar objectives but vary in their level of ambition and focus.

JPM PAB Indices seek at least a 50% absolute GHG emissions reduction compared to the corresponding Parent Index and apply at least a 7% reduction on average per annum. JPM CTB Indices seek at least a 30% absolute GHG emissions reduction compared to the corresponding Parent Index and apply at least a 7% reduction on average per annum.

JPM PAB and JPM CTB Indices use the 1.5°C temperature scenario, with no or limited overshoot referred to in the Special Report on Global Warming of 1.5 °C from the Intergovernmental Panel on Climate Change (IPCC), as the reference scenario to construct the index methodology.

The Benchmark design is also intended to reflect the economic reality of the markets for the underlying constituents of the Benchmark. Please also see section 4 above with regards to the specific aims of the Benchmark which form part of the rationale for adopting the methodology. The salient features of the Benchmark design principles which are considered, including without limitation those that follow, as appropriate for the particular Benchmark, are:

- Transparent and clear benchmark composition and Benchmark Methodology.
- Ability to source ESG data for the benchmark constituents from third-party providers on the market
- Adequacy of the sample used to represent the underlying constituents referenced by the Benchmark, and, where relevant, the market that a Benchmark is intended to measure or the strategy it is intended to reflect.
- Market depth and liquidity.
- Where relevant accessibility of the underlying markets/asset class and the constituents which the Benchmark seeks to represent.
- Replicability of index performance by the Benchmark users.

Each Benchmark must have a clear written Benchmark Methodology, the scope of which includes all procedures and criteria for its operation, including the following details set out below, which may be contained in either the rules for a Benchmark or in the Disclosures that are applicable to one or more Benchmarks:

- The objective of the Benchmark.
- Definitions for key terms.
- Available on request, the identification and roles of parties key to the operation of the Benchmark (e.g., applicable calculation entity), and contact details for the Benchmark Administrator.

- Technical specifications, such as, formulas and manner of calculation, including any adjustments if applicable.
- Publication details, details on timing of data availability and modes of delivery.
- Details of data sources, including selection and prioritization of inputs (this is not usually expected to apply, but may apply in circumstances where one particular data source or type is not available), and whether there is a minimum of quantity or quality data required to support a calculation.
- Provisions for market disruptions and extraordinary events (e.g., provisions to deal with periods where data sources may be unavailable).
- Notifications regarding amendments.
- If applicable, disclaimers with respect to use of the intellectual property of a third party that has licensed information or data for use in the Benchmark.
- A summary description of the procedures for dealing with error reports, including possible revisions to a calculated level of the Benchmark.

## 6.2 Procedures for the review and approval of the Benchmark Methodology

The Benchmark Administrator has implemented processes for the design, creation and oversight of Benchmarks.

The processes require that each Benchmark is transparent with respect to its operation. The design of each Benchmark is intended to support an accurate and reliable representation of the objective that such Benchmark seeks to represent. The design process also seeks to mitigate factors that might result in a distortion of a price, rate, index or value of the Benchmark or one of its constituents. In light of the objective of a Benchmark, the index design should be intended to reflect the economic reality of the markets for the underlying constituents of such Benchmark.

The Benchmark Administrator's processes provide that each Benchmark has a written Benchmark Methodology that includes procedures and criteria for its operation.

Each new Benchmark is approved in accordance with internal approval processes, including historical back testing (where appropriate).

The Index Administration Committee (**IAC**) will review, assess and approve proposals for the launch of a new Benchmark or family that occurs after the date of this Benchmark Statement.

## 6.3 Criteria and procedures used to determine the Benchmark

The Benchmark Administrator has implemented measures designed to promote the accuracy of published Benchmarks.

The calculation process for Benchmarks is fully automated and performed on software systems with audit trails, and managed by dedicated information technology (IT) teams. Material changes made to these software systems require a notice and approval from IT Change Management and Operational Risk teams. The IT teams have their own contingency and resiliency plans for disaster recovery. These measures help maintain the integrity and quality of the determination process of the Benchmarks.

The Benchmarks typically periodically rebalance in an automated way in accordance with the applicable Benchmark Methodology. For example, a re-

weighting or inclusion of underlying constituents, may rebalance in an automated way at the end of a month pursuant to the applicable Benchmark Methodology.

In addition, where required, employees of the Benchmark Administrator (who are directly involved in the provision of a Benchmark) are registered with the local supervisory agency of their domicile (e.g., FINRA-registered in the case of US-based personnel).

In exceptional circumstances involving a force majeure event, as set out in Section 5 above, whereby the Benchmark Administrator is unable to obtain appropriate input data from the relevant source, the Benchmark Administrator may be unable to calculate and publish levels for any Benchmark.

## **7. Use of expert judgement and discretion in determination of the Benchmark**

In the ordinary course the Administrator does not use expert judgment in respect of any GIRG Administered Index, and its operation of all GIRG Administered Indices is purely rule-based. However, under extraordinary circumstances such as market disruptions or other extraordinary events that in the reasonable opinion of the Administrator may materially and/or adversely affect the operation of any GIRG Administered Index, the Administrator may exercise expert judgment to the extent necessary to ensure that such GIRG Administered Index continues to operate as intended. In exercising expert judgement under such circumstances, the Administrator's primary objectives are to minimize the impact of adverse market conditions on the indices and to maintain the stability, replicability and transparency of the benchmarks. The Administrator will determine the appropriate course of action to take to achieve these objectives in accordance with its ad-hoc and annual governance review processes, including consultation with users and other market participants where necessary and appropriate. Such actions may include, by way of example, adjusting, disregarding or substituting the input data provided by the pricing provider for factors that materially and adversely affect the data's fitness for use in any GIRG Administered Index under the circumstance or the data's ability to represent accurately and reliably the market or economic reality that the GIRG Administered Index is intended to measure. This could result in different data being used to that stated in the Index Methodology, including the use of a single price or value only, or using a price or value arrived at by the Administrator utilising expert judgment.

The Administrator may exercise discretion in the ordinary course of the Provision of Indices for quality assurance purposes and to maintain the integrity of the index and its underlying components, including reference data and analytics. For this purpose, reference data means any characteristics of a bond, including but not limited to notional amount, ratings, sector/region classification, coupon rate, and issuance and maturity dates. Analytics is data derived from pricing input data and includes but is not limited to yield and spread.

Such discretion is exercised in accordance with the pre-determined rules-based Index Methodology and related procedures, which are designed to maintain the integrity and continuity of the index by overriding, adjusting or taking other actions as necessary to address incomplete, missing or erroneous data, or changes in market practices or conventions such as day count conventions, settlement periods, business day conventions, coupon frequency, or treatment of defaults.

PricingDirect, as a contributor of input data to the Administrator (the "**Contributor**"),



may exercise expert judgment in the provision of input data to the Administrator. This is done in accordance with established guidelines and processes governing the use of such expert judgment which sets out the following: (i) the circumstances in which the Contributor may exercise discretion; (ii) the persons within the Contributor who are permitted to exercise discretion; (iii) the internal controls that govern the exercise of the Contributors' discretion in accordance with its established guidelines and processes; and (iv) any persons within the Contributor who may evaluate ex-post the exercise of discretion. These guidelines and processes are set out in the Code of Conduct established by the Administrator and in relation to which the Contributor is required to attest to compliance. For the purposes of this Disclosure, a Contributor means a natural or legal person contributing input data for a GIRG Administered Index, which, as of the date of this Disclosure, is PricingDirect. Further information on how PricingDirect provides its valuation services is available here: <https://www.pricing-direct.com/pricingdirect/>.

In addition, if PricingDirect is unable to provide input data to the Administrator because of exceptional market circumstances or extraordinary events, the Administrator reserves the right to consider the use of an alternate input data source or to provide such data itself. If a permanent switch for the input data source is necessary, clients will be notified in advance prior to any official switch. Any such decisions will not affect the rules-based methodology of any GIRG Administered Index.

#### **8. Procedures for determination of the Benchmark in periods of stress or where transaction data sources may be insufficient, inaccurate or unreliable**

Subject to PricingDirect exercising expert judgment, as set out in Section 7 above, in the event of a disruption in the availability of the required input data or ESG data relating to any Benchmark, depending on the Benchmark Methodology the Benchmark Administrator or calculation entity may:

- have the power to delay determining the level of such input data until such disruption ceases; and/or
- calculate the Benchmark using the alternative calculation method specified in the Benchmark Methodology.

Any such event or circumstance may mean there is a delay or temporary or permanent unavailability of a Benchmark and this may adversely affect any financial transaction that uses the relevant Benchmark.

#### **9. Procedures for dealing with errors in input data or in the determination of the Benchmark**

The Benchmark Administrator has implemented processes so that errors in the calculation of the levels of Benchmarks are identified and, in the Benchmark Administrator's sole and absolute discretion, addressed. This may include, where applicable, raising such errors to the Index Administration Committee (**IAC**) for their consideration in relation to the appropriate course of action (which may include, but is not limited to, republishing the level of the applicable Benchmark and notifying applicable users of such re-publication). The IAC may, in its sole and absolute discretion, escalate any such errors to the Index Escalation Committee (**IEC**) if deemed necessary. Depending on the severity of the error and its impact on users of the particular Benchmark, a technical notification may be distributed to all

applicable users and published on JPMM under the Index Research section.

## 10. **ESG Disclosures for ESG Benchmarks**

As required under the EU BMR or UK BMR, specific ESG disclosure annexes apply to Benchmarks as prescribed under the relevant legislation and these are set out in the appendix to this benchmark statement.

For the purposes of this Benchmark Statement:

- Appendix 1 - **ESG Benchmarks** are all Benchmarks that are labelled as or refer to 'ESG' or any of the environmental, social or governance objectives described below under their respective methodologies

## APPENDIX 1 – ESG BENCHMARKS

| <b>EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY</b>                                                                                                                                                                             |                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SECTION 1 – CONSIDERATION OF ESG FACTORS</b>                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                           |
| <b>Item 1.</b> Name of the benchmark administrator.                                                                                                                                                                                                                                                                     | J.P. Morgan Securities LLC                                                                                                                                                                                |
| <b>Item 2.</b> Type of benchmark or family of benchmarks.<br><i>Choose the relevant underlying asset from the list provided in “Annex II” of the applicable legislation under EU BMR or UK BMR.</i>                                                                                                                     | Paris-Aligned and Climate-Transition Fixed Income Indices<br><br>For the purposes of Annex II, the relevant underlying assets are Fixed Income.                                                           |
| <b>Item 3.</b> Name of the benchmark or family of benchmarks.                                                                                                                                                                                                                                                           | Paris-Aligned and Climate-Transition Fixed Income Indices Family.                                                                                                                                         |
| <b>Item 4.</b> Are there in the portfolio of the benchmark administrator any EU Climate Transition Benchmarks, UK Climate Transition Benchmarks, EU Paris-aligned Benchmarks, UK Paris-aligned Benchmarks, benchmarks that pursue ESG objectives or benchmarks that take into account ESG factors?                      | Yes                                                                                                                                                                                                       |
| <b>Item 5.</b> Does the benchmark or family of benchmarks pursue ESG objectives?                                                                                                                                                                                                                                        | Yes, each benchmark within the family of Paris-Aligned and Climate-Transition Fixed Income Benchmarks pursues ESG objectives.                                                                             |
| <b>Item 6.</b> Where the response to Item 5 is positive, provide below the details (score) in relation to the ESG factors listed in Annex II for each family of benchmarks at aggregated level.<br>The ESG factors shall be disclosed at an aggregated weighted average value at the level of the family of benchmarks. |                                                                                                                                                                                                           |
| a) List of combined ESG factors <sup>2</sup> :                                                                                                                                                                                                                                                                          | Mandatory disclosures of ESG factors as listed in Annex II, for each Benchmark in the Paris- Aligned and Climate-Transition Fixed Income Benchmark family, is available <a href="#">here</a> .            |
| b) List of environmental factors <sup>3</sup> :                                                                                                                                                                                                                                                                         | Mandatory disclosures of environmental factors as listed in Annex II, for each Benchmark in the Paris- Aligned and Climate- Transition Fixed Income Benchmark family, is available <a href="#">here</a> . |
| c) List of social factors <sup>4</sup> :                                                                                                                                                                                                                                                                                | Mandatory disclosures of social factors as listed in Annex II, for each Benchmark in the Paris- Aligned and Climate-Transition Fixed Income Benchmark family, is available <a href="#">here</a> .         |
| d) List of governance factors <sup>5</sup> :                                                                                                                                                                                                                                                                            | Mandatory disclosures of governance factors as listed in Annex II, for each Benchmark in the Paris- Aligned and                                                                                           |

<sup>2</sup> The mandatory factors listed in the UK BMR and EU BMR Benchmark Statement Delegated Act as set out in *Annex II* are not taken into account in the methodology for the benchmarks and information on these mandatory factors is provided for reference purposes only.

<sup>3</sup> The mandatory factors listed in the UK BMR and EU BMR Benchmark Statement Delegated Act as set out in *Annex II* are not taken into account in the methodology for the benchmarks and information on these mandatory factors is provided for reference purposes only.

<sup>4</sup> The mandatory factors listed in the UK BMR and EU BMR Benchmark Statement Delegated Act as set out in *Annex II* are not taken into account in the methodology for the benchmarks and information on these mandatory factors is provided for reference purposes only.

<sup>5</sup> The mandatory factors listed in the UK BMR and EU BMR Benchmark Statement Delegated Act as set out in *Annex II* are not taken into account in the methodology for the benchmarks and information on these mandatory factors is provided for reference purposes only.

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Climate- Transition Fixed Income Benchmark family, is available <a href="#">here</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>7. Where the response to Item 5 is positive, provide below the details (score) for each benchmark, in relation to the ESG factors listed in Annex II, depending on the relevant underlying asset concerned.</p> <p>Alternatively, all of this information may be provided in the form of a hyperlink to a website of the benchmark administrator included in the benchmark statement. The information on the website shall be easily available and accessible. Benchmark administrators shall ensure that the information published on their website remains available for five years.</p> <p>The score of the ESG factors shall not be disclosed for each constituent of the benchmark but shall be disclosed at an aggregated weighted average value of the benchmark.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| a) List of combined ESG factors <sup>6</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mandatory disclosures of ESG factors as listed in Annex II, for each Benchmark in the Paris- Aligned and Climate- Transition Fixed Income Benchmark family, is available <a href="#">here</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| b) List of environmental factors <sup>7</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mandatory disclosures of environmental factors as listed in Annex II, for each Benchmark in the Paris- Aligned and Climate- Transition Fixed Income Benchmark family, is available <a href="#">here</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| c) List of social factors <sup>8</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Mandatory disclosures of social factors as listed in Annex II, for each Benchmark in the Paris- Aligned and Climate- Transition Fixed Income Benchmark family, is available <a href="#">here</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| d) List of governance factors <sup>9</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mandatory disclosures of governance factors as listed in Annex II, for each Benchmark in the Paris- Aligned and Climate- Transition Fixed Income Benchmark family, is available <a href="#">here</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Hyperlink to the information on ESG factors for each benchmark:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mandatory disclosures of ESG factors as listed in Annex II, for each Benchmark in the Paris- Aligned and Climate- Transition Fixed Income Benchmark family, is available <a href="#">here</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>8. Data and standards used</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p>a) Description of data sources used to provide information on the ESG factors in the benchmark statement.</p> <p>Describe how the data used to provide information on the ESG factors in the benchmark statement are sourced and whether, and to what extent, data are estimated or reported.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>Annex II disclosures have been calculated by the Benchmark Administrator using third party ESG data from the International Energy Agency, Morningstar Sustainalytics and Moody's ESG. Please refer to the Definitions Table of Annex II (<a href="#">here</a>) for more information.</p> <p>The Administrator maintains appropriate oversight of all data sourced from ESG providers involved in the Benchmark determination process. As part of this oversight function, the Administrator has implemented (i) automated controls that allow the Administrator to regularly assess changes in ESG data provided by third party vendors, and (ii) manual reviews in the form</p> |

<sup>6</sup> The mandatory factors listed in the UK BMR and EU BMR Benchmark Statement Delegated Act as set out in *Annex II* are not taken into account in the methodology for the benchmarks and information on these mandatory factors is provided for reference purposes only.

<sup>7</sup> The mandatory factors listed in the UK BMR and EU BMR Benchmark Statement Delegated Act as set out in *Annex II* are not taken into account in the methodology for the benchmarks and information on these mandatory factors is provided for reference purposes only.

<sup>8</sup> The mandatory factors listed in the UK BMR and EU BMR Benchmark Statement Delegated Act as set out in *Annex II* are not taken into account in the methodology for the benchmarks and information on these mandatory factors is provided for reference purposes only.

<sup>9</sup> The mandatory factors listed in the UK BMR and EU BMR Benchmark Statement Delegated Act as set out in *Annex II* are not taken into account in the methodology for the benchmarks and information on these mandatory factors is provided for reference purposes only.

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|                                                                                                                                                                                                                                                                                                                                                                 | <p>of regular meetings (at the beginning and at the end of each month) where the ESG data is appropriately assessed and approved by the Administrator’s personnel for purposes of re-weighting and calculating the Benchmarks. Additionally, the Administrator undertakes the verification and validation of ESG data on an ad-hoc basis by comparing it with historic ESG data that the Administrator’s personnel receive through automated reports.</p> <p>GHG emissions data for each issuer (Issuer Emissions) is sourced from Moody’s. The GHG emissions include scope 1, 2 and 3 emissions and is calculated as tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e). Issuers with no reported or estimated emissions (across scope 1, 2 and 3) provided by Moody’s are estimated by JP Morgan using a rules-based waterfall logic, outlined in the J.P. Morgan Paris-Aligned and Climate-Transition Benchmark Rules and Methodology, available <a href="#">here</a>.</p> |
| <p>b) Reference standards.</p> <p>List the supporting standards used for the reporting under item 6 and/or item 7.</p>                                                                                                                                                                                                                                          | <p>The ESG methodology of the Benchmark Administrator’s Paris- Aligned and Climate- Transition Fixed Income Benchmarks integrates the United Nations Global Compact Principles (UNGC).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p><b>SECTION 2 - ADDITIONAL DISCLOSURE REQUIREMENTS FOR EU CLIMATE-TRANSITION BENCHMARKS, UK CLIMATE-TRANSITION BENCHMARKS, EU PARIS-ALIGNED BENCHMARKS AND UK PARIS-ALIGNED BENCHMARKS</b></p>                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p><b>9.</b> Where a benchmark is labelled as ‘EU Climate Transition Benchmark’, ‘UK Climate Transition Benchmark’, ‘EU Paris-aligned Benchmark’ or ‘UK Paris-aligned Benchmark’, benchmark administrators shall also disclose the following information:</p>                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p>a) forward-looking year-on-year decarbonisation trajectory</p>                                                                                                                                                                                                                                                                                               | <p>The forward-looking year-on-year decarbonisation trajectory for each Benchmark in the Paris- Aligned and Climate- Transition Fixed Income Benchmark family can be found in the J.P. Morgan Benchmark Statement Annex II PAB/CTB Disclosures, available <a href="#">here</a>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <p>b) degree to which the IPCC decarbonisation trajectory (1.5 C with no or limited overshoot) has been achieved on average per year since creation;</p>                                                                                                                                                                                                        | <p>Details of the achievement of the IPCC decarbonisation trajectory for each Benchmark in the Paris- Aligned and Climate- Transition Fixed Income Benchmark family can be found in the J.P. Morgan Benchmark Statement Annex II PAB/CTB Disclosures, available <a href="#">here</a>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p>c) overlap between those benchmarks and their investable universe, as defined in the relevant delegated legislation under EU BMR or UK BMR, using the active share at relevant underlying asset level.</p>                                                                                                                                                   | <p>The overlap between these Benchmarks and their investable universe for each Benchmark in the Paris- Aligned and Climate- Transition Fixed Income Benchmark family can be found in the J.P. Morgan Benchmark Statement Annex II PAB/CTB Disclosures, available <a href="#">here</a>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p><b>SECTION 3 - DISCLOSURE OF THE ALIGNMENT WITH THE OBJECTIVES OF THE PARIS AGREEMENT</b></p>                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p><b>10.</b> By the date of application of the relevant delegated legislation under EU BMR or UK BMR, for significant equity and bond benchmarks, EU Climate Transition Benchmarks, UK Climate Transition Benchmarks, EU Paris-aligned Benchmarks and UK Paris-aligned Benchmarks, benchmark administrators shall also disclose the following information.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| By 31 December 2021, benchmark administrators shall, for each benchmark or, where applicable, each family of benchmarks, disclose the following information:                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| a) Does the benchmark align with the target of reducing carbon emissions or the attainment of the objectives of the Paris Agreement;                                                             | <p>Yes.</p> <p>Climate Transition Benchmarks align with the target of reducing carbon emissions.</p> <p>Paris-aligned Benchmarks align with the attainment of the objectives of the Paris Agreement.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| b) the temperature scenario, in accordance with international standards, used for the alignment with the target of reducing GHG emissions or attaining of the objectives of the Paris Agreement; | The Benchmarks use the reference 1.5 °C temperature scenario with no or limited overshoot, referred to in the Special Report on Global Warming of 1,5 °C from the Intergovernmental Panel on Climate Change (“IPCC”) as the reference temperature scenario.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| c) the name of the provider of the temperature scenario used for the alignment with the target of reducing GHG emissions or the attainment of the objectives of the Paris Agreement              | The Special Report on Global Warming of 1.5 °C from the Intergovernmental Panel on Climate Change (the “IPCC”).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| d) the methodology used for the measurement of the alignment with the temperature scenario;                                                                                                      | <p>Terms not defined below are defined within the J.P. Morgan Paris-Aligned and Climate-Transition Benchmark Rules and Methodology, available <a href="#">here</a>.</p> <p><b>Index Construction</b></p> <p><b>1. Define Data Inputs</b><br/>GHG emissions data for each issuer (Issuer Emissions) is sourced from Moody’s. The GHG emissions include scope 1, 2 and 3 emissions and is calculated as tonnes of carbon dioxide equivalent (tCO2e). Issuers with no reported or estimated emissions (across scope 1, 2 and 3) are estimated using a waterfall logic.</p> <p>For more information on the data inputs, please refer to the Data Sources and Scope section below.</p> <p><b>Emissions waterfall logic</b><br/>As GHG emissions are an essential input to the JPM PAB and JPM CTB Index methodologies, JPM will apply a waterfall logic to estimate emissions where they are missing from Moody’s.</p> <p>If a corporate issuer is not covered by Moody’s, a regional-sector average is utilised to estimate emissions using the data available from Moody’s on the other relevant issuers. For this calculation, scope 1 and 2 emissions are grouped together, and scope 3 emissions are considered separately.</p> <p>The regional-sector average is calculated by JPM at the issuer level as needed (e.g. if only scope 1 and 2 is missing, then the regional-sector average of scope 1 and 2 emissions</p> |

will be applied) and will only be used when the region-sector grouping has at least two issuers. If the region-sector grouping has fewer than two issuers, a regional average will be used.

The region and sector designation for the issuer will be taken from its index classification in the Parent Index, as detailed in the relevant JPM PAB or JPM CTB Index Factsheet here.

## 2. Calculate Parent Index Emissions

For the respective Parent Index, the Parent Index Emissions is calculated using the absolute GHG emissions in tCO<sub>2e</sub> of each issuer and their index weight in the Parent Index. The Parent Index Emissions is calculated as the weighted average absolute emissions, as follows:

*Parent Index Emissions*

$$= \sum_{i=0}^n \text{Issuer } Mkv \%_i$$

\* *Issuer Emissions<sub>i</sub>*

## 3. Apply Exclusions

Once the requisite exclusions have been applied, a 3% cap on an issuer's weight is applied and the Index Emissions of the resulting JPM PAB or JPM CTB Index are recalculated using the weighted average formula, as follows:

*JPM PAB or JPM Index Emissions*

$$= \sum_{i=0}^n \text{Issuer } Mkv \%_i$$

\* *Issuer Emissions<sub>i</sub>*

## 4. Calculate Base Year Emission Target and Annual Emissions Targets

At inception of the Index, the Base Year, the JPM PAB and JPM CTB Index Base Year Emission Target, shall be at least 50% and 30% lower, respectively, than the Parent Index Emissions, defined for each JPM PAB and JPM CTB Index.

$$\begin{aligned} & \text{JPM PAB Index Base Year Emissions Target} \\ &= \text{JPM PAB Index Base Year Emissions} \\ &\leq \text{Parent Index Base Year Emissions} * 50\% \end{aligned}$$

$$\begin{aligned} & \text{JPM CTB Index Base Year Emissions Target} = \\ & \text{JPM CTB Index Base Year Emissions} \leq \\ & \text{Parent Index Base Year Emissions} * 70\% \end{aligned}$$

In addition, both JPM PAB and JPM CTB Indices target an annual 7% geometric decarbonisation from their respective Index Base Year Emissions level.

The Annual Emissions Targets define the annual level of JPM PAB or JPM CTB Index Emissions that must be met in subsequent years, in order to maintain the 7% Decarbonisation Trajectory. The Annual Emissions Targets will be achieved through a twice yearly rebalance process.

### 5. Define High Emission and Low Emission Buckets

Issuers are divided into two emission buckets: (i) High Emission Bucket and (ii) Low Emission Bucket, based on their contribution to the JPM PAB or JPM CTB Index Emissions. In some cases, due to the structure of market emissions, a third Very High Emissions Bucket may be included, which is detailed in the relevant JPM PAB or JPM CTB Index Factsheet. J.P. Morgan Index Factsheets can be found [here](#). The level of Contribution (%) to Index Emissions required to qualify for the High Emissions Bucket is reviewed and defined at each semi-annual rebalance, to reduce turnover.

An issuer's contribution (Contribution %) to the JPM PAB or JPM CTB Index Emissions is calculated as follows:

$$\begin{aligned} & \textit{Contribution \%} \\ &= \frac{(\textit{Issuer Mkv \%} * \textit{Issuer Emissions})}{\textit{JPM PAB or JPM CTB Index Emissions}} \end{aligned}$$

The Initial Emissions Bucket weight is the resulting sum of all issuer weights within that bucket, for example:

$$\begin{aligned} & \textit{Initial Emissions Bucket Weight} \\ &= \sum_{i=0}^n \textit{Issuer Mkv \%}_i \end{aligned}$$

The Emissions of each Emissions Bucket can be calculated as the weighted average of all issuer emissions within that bucket, for example:

$$\begin{aligned} & \textit{Bucket Emissions} \\ &= \sum_{i=0}^n \textit{Issuer Mkv \%}_i \\ & * \textit{Issuer Emissions}_i \end{aligned}$$

The High Emissions and Low Emissions Buckets are assigned an overall weight, which is used to determine the issuers' resulting weights in the JPM PAB or JPM CTB Index. The weight of each bucket is determined by applying a Multiplier, which is described in Section 6 below.

### 6. Calculate Multipliers and Apply Integration Mechanics

The JPM PAB and JPM CTB Index Base Year Emissions Target and the Annual Emissions Targets are achieved by



applying a Multiplier to both the High Emission and Low Emission Buckets, such that the weights of each bucket when combined together create an index product meeting the required JPM PAB and JPM CTB Index Base Date Emissions Target and the Annual Emissions Targets.

If the JPM PAB or JPM CTB Index Emissions do not meet the required Base Year Emissions Target purely through the application of Baseline Exclusions and Activity Exclusions, then the weight of the High Emission Bucket will be set such that when combined with the Low Emission Bucket, the overall JPM PAB or JPM CTB Index Emissions is lower than or equal to the JPM PAB or JPM CTB Index Base Date Emissions Target.

The Multipliers used to determine the weights of the Emission Buckets are calculated using an optimization function that uses the Initial Emission Bucket weights and Bucket Emissions. The optimizer function uses a set of defined constraints to calculate the required Multipliers to meet the Decarbonisation Trajectory.

Constraints:

1.  $JPM\ PAB\ or\ JPM\ CTB\ Index\ Emissions \leq \min(Parent\ Index\ Annual\ Emissions\ Target, JPM\ PAB\ or\ JPM\ CTB\ Index\ Annual\ Index\ Emissions\ Target)$
2.  $Emission\ Bucket\ Weight_{(low)} \geq Initial\ Emission\ Bucket\ Weight_{(low)}$
3.  $\sum(Emission\ Bucket\ Weights) = 100\%$

Constraints 1 & 2 force the optimizer to only increase the weights of the Low Emissions Bucket when the JPM PAB or JPM CTB Index Emissions are above the Annual Emission Target. If the JPM PAB or JPM CTB Index Emissions are below the Annual Emission Target the results of the optimizer are the Initial emission bucket weights, this prevents the High Emissions Bucket increasing in weight.

Constraint 3 requires the index weight to remain at 100% after the optimization. If the optimizer fails, the Low, High and Very High Emissions Buckets will need to re-defined to allow the JPM PAB or JPM CTB Index Emissions to meet the Decarbonisation Trajectory.

The required Annual Emission Targets are then met each year by reducing the multiplier applied to the High Emission Bucket, meaning that the relative weight of the High Emission Bucket can be gradually reduced over time to result in a

reduction in the JPM PAB or JPM CTB Index Emissions in line with the projections. The following formula illustrates these constraints for a JPM PAB Index:

$$\begin{aligned}
 & [Multiplier_{(High\ Emitter\ Bucket)} * \\
 & Bucket\ Emissions_{(High\ Emitter\ Bucket)} + \\
 & Multiplier_{(Low\ Emitter\ Bucket)} * \\
 & Bucket\ Emissions_{(Low\ Emitter\ Bucket)}] \leq \\
 & \min(JPM\ PAB\ Index\ Emissions_{t_0} * (1 - 7\%)_n\ 0.5 \\
 & * Parent\ Index\ Emissions)
 \end{aligned}$$

#### Objective

$$\begin{aligned}
 & Issuer\ Mkv\ \%_{(High\ Emitter\ Bucket)} \\
 & + Issuer\ Mkv\ \%_{(Low\ Emitter\ Bucket)} \\
 & = 100\%
 \end{aligned}$$

To reduce turnover between the High Emission and the Low Emission Buckets due to changes in issuance or emissions, the entry threshold will be set higher than the exit threshold for eligibility, i.e. 5% for entry into the High Emission Bucket, 3.5% for any subsequent switch from High Emission Bucket to Low Emission Bucket. For more information, see the Rebalancing Rules below.

#### 7. Calculate New Index Weights

Issuer weights are assigned by renormalizing relative to the total High Emission Bucket and Low Emission Bucket weights.

For example, if the total index weight of issuers in the High Emission Bucket is 35% and the allowable weight of the High Emission Bucket is set at 20% after the Multiplier is applied, then the final market value for each issuer will be determined by multiplying its weight by 20/35.

This calculated market value determines the weight of each constituent in the final JPM PAB or JPM CTB Index.

#### 8. Calculate Index Total Return Using New Index Weights

If a bond is in the High Emissions bucket, and has a notional amount of 1 billion USD, then it needs to be scaled down by multiplying by 20/35 in the previous example, giving an adjusted notional amount:

$$1,000,000,000 * 20/35 = 571,428,571$$

Bond Market Value(t) = Bond Dirty Price(t) \* Bond Notional Amount (Adjusted as above)

|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                   | <p><i>Bond Total Return</i><sub>(t+1)</sub><br/> <math display="block">= \frac{\text{Bond Dirty Price}_{(t+1)} * \text{Bond Notional Amount}}{\text{Bond Dirty Price}_t * \text{Bond Notional Amount}}</math></p> <p>The Index Total Return on day t+1 is calculated as the sumproduct of these Bond Total Returns (t+1), weighted by their Bond Market values on day t'</p> <p>The Bond Dirty Price is the Clean price provided by Pricing Direct as input data into the returns calculation plus accrued interest as calculated by the bond definitions.</p> <p><b>Semi-Annual Rebalance Events</b><br/> Each JPM PAB Index and JPM CTB Index is rebalanced semi-annually at January month-end and July month-end to ensure that the JPM PAB Index Emissions or JPM CTB Index Emissions meet the required Annual Emissions Targets.</p> <p>Please see the J.P. Morgan Paris-Aligned and Climate-Transition Benchmark Rules and Methodology for more information, available <a href="#">here</a>.</p> |
| e) the hyperlink to the website of the temperature scenario used;                 | <a href="https://www.ipcc.ch/sr15/">https://www.ipcc.ch/sr15/</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Date on which information has last been updated and reason for the update:</b> | November 2024.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

