

FTSE Fixed Income EU Climate Benchmarks Index Series

v1.3



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Section 1

Introduction

1. Introduction

- 1.1 This document sets out the Ground Rules for the construction and management of the FTSE Fixed Income EU Climate Benchmarks Index Series.
- 1.2 The FTSE Fixed Income EU Climate Benchmarks Index Series is designed to align with the minimum requirements of the Paris-Aligned Benchmarks (PAB) and Climate Transition Benchmarks (CTB) set out in the EU Benchmark Regulation and UK Benchmark Regulation (BMR)¹.
- 1.2.1 These Ground Rules should be read in conjunction with the FTSE Fixed Income Index Guide, which can be accessed using the following link:
[FTSE-Fixed-Income-Indexes-Guide.pdf](#)
- 1.3 The FTSE Fixed Income EU Climate Benchmarks Index Series consists of the following:
- FTSE World Broad Investment-Grade (WorldBIG) Paris-aligned (PAB) Corporate Bond Index
 - FTSE World Broad Investment-Grade (WorldBIG) Climate Transition (CTB) Corporate Bond Index
 - FTSE Euro Broad Investment-Grade (EuroBIG) Paris-aligned (PAB) Corporate Bond Index
 - FTSE Euro Broad Investment-Grade (EuroBIG) Climate Transition (CTB) Corporate Bond Index
 - FTSE US Broad Investment-Grade (USBIG) Paris-aligned (PAB) Corporate Bond Index
 - FTSE US Broad Investment-Grade (USBIG) Climate Transition (CTB) Corporate Bond Index
- 1.3.1 The FTSE Fixed Income EU Climate Benchmarks Index Series takes account of ESG factors in its design (see Section 5).
- 1.3.2 If a tilting approach is used for an ESG data input, the objective is for the index methodology to overweight and/or underweight securities according to specific ESG criteria. This approach will not remove all securities with exposure to a specific ESG activity or sector.
- 1.4 FTSE Russell**
- 1.4.1 FTSE Russell is a trading name of FTSE International Limited, Frank Russell Company, FTSE Global Debt Capital Markets Limited (and its subsidiaries FTSE Global Debt Capital Markets Inc. and FTSE Fixed Income Europe Limited), FTSE Fixed Income LLC, FTSE (Beijing) Consulting Limited, Refinitiv Benchmark Services (UK) Limited, Refinitiv Limited and Beyond Ratings.
- 1.4.2 FTSE Russell hereby notifies users of the index that it is possible that factors, including external factors beyond the control of FTSE Russell, may necessitate changes to, or the cessation, of the index and

¹ The requirements are set out in [Regulation \(EU\) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds](#) (the European Benchmark Regulation) and the [Commission Delegated Regulation \(EU\) 2020/1818 of 17 July 2020 supplementing Regulation 2016/1011 of the European Parliament and of the Council as regards minimum standards for EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks](#). The European Benchmark Regulation is retained EU law in the UK under The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019 (the UK Benchmark Regulation).

therefore, any financial contracts or other financial instruments that reference the index or investment funds which use the index to measure their performance should be able to withstand, or otherwise address the possibility of changes to, or cessation of, the index.

- 1.4.3 Index users who choose to follow this index or to buy products that claim to follow this index should assess the merits of the index's rules-based methodology and take independent investment advice before investing their own or client funds. No liability whether as a result of negligence or otherwise is accepted by FTSE Russell (or any person concerned with the preparation or publication of these Ground Rules) for any losses, damages, claims and expenses suffered by any person as a result of:
- any reliance on these Ground Rules, and/or
 - any inaccuracies in these Ground Rules, and/or
 - any non-application or misapplication of the policies or procedures described in these Ground Rules, and/or
 - any inaccuracies in the compilation of the Index or any constituent data.

Section 2

Management responsibilities

2. Management responsibilities

2.1 FTSE Fixed Income LLC (“FTSE”)

2.1.1 FTSE is the benchmark administrator of the index series.²

2.1.2 FTSE is responsible for the daily calculation, production and operation of the index series and will:

- maintain records of the index weightings of all constituents;
- make changes to the constituents and their weightings in accordance with the Ground Rules;
- carry out the periodic index reviews of the index series and apply the changes resulting from the reviews as required by the Ground Rules;
- disseminate the indices.

2.2 Amendments to these Ground Rules

2.2.1 These Ground Rules shall be subject to regular review (at least once a year) by FTSE Russell to ensure that they continue to best reflect the aims of the index series. Any proposals for significant amendments to these Ground Rules will be subject to consultation with FTSE Russell advisory committees and other stakeholders if appropriate. The feedback from these consultations will be considered by the FTSE Russell Index Governance Board before approval is granted.

2.2.2 As provided for in the Statement of Principles for FTSE Russell Indices, where FTSE Russell determines that the Ground Rules are silent or do not specifically and unambiguously apply to the subject matter of any decision, any decision shall be based as far as practical on the Statement of Principles. After making any such determination, FTSE Russell shall advise the market of its decision at the earliest opportunity. Any such treatment will not be considered as an exception or change to the Ground Rules, or to set a precedent for future action, but FTSE Russell will consider whether the Rules should subsequently be updated to provide greater clarity.

² The term administrator is used in this document in the same sense as it is defined in Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds (the European Benchmark Regulation) and [The Benchmarks \(Amendment and Transitional Provision\) \(EU Exit\) Regulations 2019](#) (the UK Benchmark Regulation). FTSE Fixed Income LLC administers the Index Series in line with the third country transitional provisions contained within Article 51(5) of the European Benchmark Regulation and the third country transitional provisions as amended by Article 42(5) of the UK Benchmark Regulation.

Section 3

FTSE Russell index policies

3. FTSE Russell index policies

These Ground Rules should be read in conjunction with the following policy documents which can be accessed using the links below:

3.1 Queries and Complaints

FTSE Russell's complaints procedure can be accessed using the following link:

[FTSE Russell Benchmark Determination Complaints Handling Policy.pdf](#)

3.2 Statement of Principles for FTSE Fixed Income Indices (the Statement of Principles)

Indices need to keep abreast of changing markets and the Ground Rules cannot anticipate every eventuality. Where the Rules do not fully cover a specific event or development, FTSE Russell will determine the appropriate treatment by reference to the Statement of Principles for FTSE Fixed Income Indices which summarises the ethos underlying FTSE Russell's approach to index construction. The Statement of Principles is reviewed annually and any changes proposed by FTSE Russell are presented to the FTSE Russell Policy Advisory Board for discussion before approval by the FTSE Russell Index Governance Board.

The Statement of Principles for Fixed Income Indices can be accessed using the following link:

[Statement of Principles Fixed Income Indices.pdf](#)

3.3 Recalculation Policy and Guidelines

The Recalculation Policy and Guidelines for Fixed Income Indices document is available from the FTSE Russell website using the link below or by contacting fi.index@lseg.com.

[Fixed Income Recalculation Policy and Guidelines.pdf](#)

3.4 Policy for Benchmark Methodology Changes

Details of FTSE Russell's policy for making benchmark methodology changes can be accessed using the following link:

[Policy for Benchmark Methodology Changes.pdf](#)

3.5 FTSE Russell Governance Framework

To oversee its indices, FTSE Russell employs a governance framework that encompasses product, service and technology governance. The framework incorporates the London Stock Exchange Group's three lines of defense risk management framework and is designed to meet the requirements of the IOSCO Principles for Financial Benchmarks³, the European benchmark regulation⁴ and the UK benchmark regulation⁵. The FTSE Russell Governance Framework can be accessed using the following link:

[FTSE Russell Governance Framework.pdf](#)

³ IOSCO Principles for Financial Benchmarks Final Report, FR07/13 July 2013.

⁴ Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds.

⁵ The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019.

Section 4

Base Indices for the Fixed Income EU Climate Benchmarks Index Series

4. Base Indices for the EU Climate Benchmarks Index Series

4.1 Base indices

- 4.1.1 The Base Index for the FTSE World Broad Investment-Grade Paris-aligned Corporate Bond Index (“WorldBIG PAB”) and the FTSE World Broad Investment-Grade Climate Transition Corporate Bond Index (“WorldBIG CTB”) is the corporate component of the market capitalization weighted FTSE World Broad Investment-Grade Bond Index (WorldBIG). The FTSE WorldBIG is a multi-sector, multi-currency benchmark which provides a broad-based measure of the global fixed income markets.
- 4.1.2 The Base Index for the FTSE Euro Broad Investment-Grade Paris-aligned Corporate Bond Index (“EuroBIG PAB”) and the FTSE Euro Broad Investment-Grade Climate Transition Corporate Bond Index (“EuroBIG CTB”) is the corporate component of the market capitalization weighted FTSE Euro Broad Investment-Grade Bond Index (EuroBIG). The FTSE EuroBIG is a multi-sector benchmark for investment-grade, Euro-denominated government, government-sponsored, collateralized, and corporate bonds.
- 4.1.3 The Base Index for the FTSE US Broad Investment-Grade Paris-aligned Corporate Bond Index (“USBIG PAB”) and the FTSE US Broad Investment-Grade Climate Transition Corporate Bond Index (“USBIG CTB”) is the corporate component of the market capitalization weighted FTSE US Broad Investment-Grade Bond Index (USBIG). The FTSE USBIG tracks the performance of investment-grade US Dollar-denominated government, government-sponsored, collateralized and corporate bonds.
- 4.1.4 For full details on the design criteria and calculation assumptions for the base indices, please refer to the FTSE Fixed Income Index Guide which can be accessed using the following link: [FTSE Fixed Income Index Guide](#).

4.2 Eligible securities

- 4.2.1 The FTSE Fixed Income EU Climate Benchmarks Index Series consists of the indices in the table below. To be eligible for each of the FTSE Fixed Income EU Climate Benchmarks Indices, securities must first meet the index eligibility criteria for the respective “Base Index” shown in the table.

FTSE Fixed Income EU Climate Benchmarks Index	Base Index
FTSE WorldBIG PAB Corporate Bond Index FTSE WorldBIG CTB Corporate Bond Index	FTSE World Broad Investment-Grade Corporate Bond Index
FTSE EuroBIG PAB Corporate Bond Index FTSE EuroBIG CTB Corporate Bond Index	FTSE Euro Broad Investment-Grade Corporate Bond Index
FTSE USBIG PAB Corporate Bond Index FTSE USBIG CTB Corporate Bond Index	FTSE US Broad Investment-Grade Corporate Bond Index

4.3 Excluded companies

- 4.3.1 The index series apply the minimum set of exclusion.
- 4.3.2 The index series apply the exclusion guidelines for FTSE Russell ESG Fixed Income Indices, details of the rules can be found in the Section 9 of [Guide to the Construction and Maintenance of Exclusion Lists used in FTSE Russell Indices](#).
- 4.3.3 For complete exclusion categories, please refer to Appendix A.

Section 5

ESG data inputs

5. ESG data inputs

5.1 The following ESG datasets are used in the construction of the FTSE Fixed Income EU Climate Benchmarks Index Series.

ESG data inputs	Details	Used for selection, weighting or exclusion ⁶
FTSE Green Revenues	FTSE Russell's Green Revenues data model identifies companies providing green products and services and classifies associated revenues based on the Green Revenues Classification System (GRCS). GRCS is a taxonomy used to define and measure the industrial transition to a Green Economy. More information can be found here: https://www.lseg.com/content/dam/ftse-russell/en_us/documents/policy-documents/ftse-green-revenues-classification-system.pdf	Weighting
TPI Management Quality (MQ)	FTSE Russell's TPI Management Quality (MQ) data evaluates and tracks the quality of companies' governance/management of their greenhouse gas emissions and of risks and opportunities related to the low-carbon transition. More information can be found here: https://www.transitionpathwayinitiative.org/methodology	Weighting
TPI Carbon Performance Scores (CP)	TPI Carbon Performance (CP) scores assess how companies' carbon performance now and in the future might compare to the international targets and national pledges made as part of the Paris Agreement. More information can be found here: https://www.transitionpathwayinitiative.org/methodology	Weighting
FTSE Carbon Emissions	The FTSE Carbon Emissions Dataset provides reported and estimated Scope 1, Scope 2 and Scope 3 emissions data for both the assets and activities controlled by global publicly listed companies and their entire value chain (upstream and downstream activities). More information can be found here: Guide to FTSE and Third Party Sustainable Investment Data used in FTSE Russell Indices	Weighting
Product-related data - Sustainalytics	Sustainalytics Product Involvement data identifies the nature and extent of a company's involvement in a range of product and business activities. More information can be found here: https://www.sustainalytics.com/investor-solutions/esg-research/esg-screening/esg-criteria	Exclusion
Conduct-related data - Sustainalytics	Sustainalytics Global Standards Screening (GSS) assess companies' impact on stakeholders and the extent to which a company causes, contributes or is linked to violations of international norms and standards. More information can be found here: www.sustainalytics.com/investor-solutions/esg-research/esg-screening/global-compact-norms-based-screening	Exclusion
Industry Classification - TRBC	The Refinitiv Business Classification (TRBC) is a sector and industry classification used to identify the activities of companies with exposure to specific products or services. More information can be found here: https://www.refinitiv.com/en/financial-data/indices/trbc-business-classification	Exclusion

⁶ Definitions

Selection- ESG data is used to select or rank constituents, or calculate minimum scores or thresholds

Weighting- ESG data is used to calculate the weight of a constituent in an index

Exclusion- ESG data is used to exclude securities from the index

ESG data inputs	Details	Used for selection, weighting or exclusion ⁶
Industry Classification - COBS	The FTSE Russell Corporate Bond Sector (COBS) scheme is maintained by FTSE Russell for all bonds tracked by the FTSE Fixed Income Indices. COBS subsectors are used to determine issuer involvement in products or services. Further information can be found in the FTSE Fixed Income Index Guide .	Exclusion
Climate Bond Initiative (CBI) Green Bond data	The Climate Bond Initiative (CBI) provides independent analysis on green bond use of proceeds and provides opinions on the green credential of the intended proceeds allocation. CBI assesses each labelled green bond against its Climate Bonds Taxonomy based on its issuer's public disclosure, to understand if the bond use of proceeds is in line with the CBI eligible categories. More information can be found here: https://www.climatebonds.net/files/files/cbi-gb-methodology-061020.pdf	Weighting
Minimum Set of Exclusions for ESG Indices	The minimum set of exclusions apply to this Index Series. Details of the minimum exclusions can be found in the Guide to the Construction and Maintenance of FTSE Exclusion Lists.pdf .	Exclusion

5.1.1 Further information on ESG data provided by FTSE Russell and third parties used in this index (index series) can be found in the following guide:

[Guide to FTSE and Third Party ESG Data used in FTSE Russell Indices](#)

This includes information on the data and standards used for these ESG data inputs. These data sets may include estimated data.

5.2 ESG Metrics

5.2.1 Please see the [Fixed Income EU Climate Benchmarks](#) website for the scores and values of the environmental, social and governance (ESG) factors listed in Annex II to Delegated Regulation (EU) 2020/1816 which are taken into account in the benchmark methodology for the benchmarks within this index series.

5.3 The update frequency for each dataset is shown in the table below:

ESG Dataset	Update Frequency	Data Cut-Off Date	Implementation of Data Update
FTSE Green Revenues Data	Annual	August month-end	October index profiles
TPI Management Quality and Carbon Performance Scores	Annual	August month-end	October index profiles
FTSE Carbon Emissions Data	Annual	August month-end	October index profiles
Sustainalytics Data (Product Involvement Data and GSS scores)	Monthly ⁷	Each monthly index fixing date	The following months' index profile
Industry Classifications (TRBC and COBS codes)	Monthly	Each monthly index fixing date	The following months' index profile
Refinitiv Hierarchical Methodology	Monthly	Each monthly index fixing date	The following months' index profile
Climate Bonds Initiative Green Bond Data	Monthly	Each monthly index fixing date	The following months' index profile

5.3.1 Categories of product involvement⁸

⁷ Sustainalytics data published on a quarterly basis.

Product involvement data assesses companies' involvement in certain products or services in terms of:

- Direct involvement: a company is directly involved in a product in one or more ways such as production, distribution, or related services; or
- Involvement through ownership: a company is indirectly involved in a product through ownership of an involved company (“significant ownership”).
 - If a company holds a majority stake (more than 50%, of another company that is considered as direct involvement), the parent company is considered involved in the same category of involvement as the subsidiary. In these cases, Sustainalytics attributes to the parent the revenues of the involved subsidiary.
 - In the case of a minority stake (10-50% of another company that is considered as the ‘significant ownership’ category), the revenues of the subsidiary are not attributed to the parent. Instead, the percentage of the ownership stake is captured to represent the level of control and influence present in the relationship.

Section 6

Climate transition indicators

6. Climate transition indicators

6.1 Green Revenues (GR)

- 6.1.1 The Green Revenues (GR) score is the ratio of Green Revenues (as determined by the FTSE Green Revenues Classification System) to total revenue based on the FTSE Russell Green Revenue 2.0 data model.
- 6.1.2 The FTSE Green Revenues Classification System excludes any Green Revenues from Tier 3 activities. Tier 3 activities are defined as micro sectors which have some environmental benefits but are overall net neutral or negative.
- 6.1.3 All index constituents are assigned a FTSE Green Revenues Ratio. The FTSE Green Revenues Ratio for a company can be:
- Zero, if a constituent company has no exposure to the Green Economy;
 - A non-zero value, when a constituent company is identified to generate Green Revenues as defined by the FTSE Green Revenues Classification System;
 - The minimum of the stated range of possible Green Revenues, when a company discloses insufficient information for a precise determination of the FTSE Green Revenues Ratio.

6.2 Green bonds

Green bonds are specifically designated to finance green projects that have environmental and/or climate benefit. CBI screens each labelled green bond against its Climate Bonds Taxonomy based on issuer's public disclosure and assists investors to understand if the bond use of proceeds is in eligible categories that are in line with the Paris target. For more information, please see section 5.1. Green bond issuers are assigned a Green Bond Ratio (GBR) value as described in Rule 6.2.1, as well as a multiplier at the issue level.

6.2.1 Green Bond Ratio (GBR)

The Green Bond Ratio (GBR) is the ratio of total par amount outstanding of green bonds to total par amount outstanding of index-eligible bonds for the same issuer. For example,

$$GBR_x = \frac{\text{Sum of Issuer } x\text{'s green bond par amount in WorldBIG}}{\text{Sum of Issuer } x\text{'s index bond par amount in WorldBIG}}$$

In the example, Issuer x 's total par amount outstanding of green bonds in WorldBIG would be equivalent to its total par amount outstanding in the FTSE WorldBIG Green Impact Index.

6.2.2 Green Bond Tilt

The Green Bond Tilt is a multiplier at the bond level to uplift CBI-labelled green bonds in addition to the issuer level tilt. Such bonds are assigned multipliers of 1.5 in the index weighting formula.

6.3 The Transition Pathway Initiative (TPI)

6.3.1 The TPI Methodology assesses companies' progress on the transition to a low-carbon economy based on two dimensions: Management Quality and Carbon Performance.

6.3.2 The TPI Management Quality (MQ) assesses the quality of companies' management of their greenhouse gas emissions, and of risks and opportunities related to the low-carbon transition. TPI MQ scores are derived from the climate theme data from FTSE Russell's ESG data model based on TPI's methodology which is published on the public website [Methodology – Transition Pathway Initiative](#).

6.3.3 The TPI Carbon Performance (CP) assesses individual companies' current and projected future emissions pathways and how this compares to the international targets and national pledges made as part of the UN Paris Agreement. Companies that receive an assessment are categorized into different groups. Details of the TPI CP categories are described in the FTSE TPI Climate Transition Index Series Ground Rules.

For companies in Pulp and Paper:

- **Below 2°C:** A company's carbon emissions pathway is aligned with limiting global warming to below 2°C above pre-industrial levels.
- **2°C:** A company's carbon emissions pathway is aligned with limiting global warming to 2°C above pre-industrial levels.
- **Paris Pledges:** A company's carbon emission pathway is aligned with the public country-level commitments made on the Paris Agreement (known as Nationally Determined Contributions or NDCs) but is not aligned with limiting global warming to 2°C.
- **Not Aligned:** A company's carbon emissions pathway is not aligned with limiting global warming to 2°C above pre-industrial levels or has insufficient disclosures to enable such an assessment.
- **Not Assessed:** A company has not yet been assessed for its Carbon Performance.

For companies in Electricity Utilities, Oil & Gas, Automobiles, Airlines, Shipping, Cement, Diversified Mining, Steel, and Aluminium sectors "all other sectors":

- **1.5°C Aligned:** A company's carbon emissions pathway is consistent with the overall aim of the Paris Agreement, and at the high end of the range of ambition, namely, to limit "the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels".
- **Below 2°C Aligned:** A company's carbon emissions pathway is consistent with the overall aim of the Paris Agreement to limit warming, albeit at the middle of the range of ambition.
- **National / International Pledges:** A company's carbon emission pathway is consistent with the global aggregate of emissions reductions related to policies introduced or under development as of mid-2021.
- **Not Aligned:** A company's carbon emissions pathway is not aligned with limiting global warming to 2°C above pre-industrial levels or has insufficient disclosures to enable such an assessment.
- **Not Assessed:** A company has not yet been assessed for its Carbon Performance.

Companies are assigned a CP score based on their Carbon Performance assessment:

Carbon Performance Categories	CP Scores (Multiplier)
Below 2°C (pulp & paper only)/ 1.5°C	2.0
2°C (pulp & paper only)/ Below 2°C	1.5
Paris/ National/ International Pledges	0.8
Not aligned	0.0
Not assessed	1.0 (neutral)

6.4 Carbon Emissions Intensity (CEI)

Carbon Emissions Intensity is defined as the latest annual CO₂ equivalent greenhouse gas (GHG) emissions in metric tons scaled by enterprise value including cash (in USD). CO₂ equivalent GHG emissions data is defined as GHG Protocol Scope 1 and 2 and Scope 3 emissions. Enterprise Value data are sourced from Worldscope. The data cut-off date for the availability of Carbon Emissions Intensity is the close of business on the last business day of the month prior to the review month.

6.5 Private subsidiaries

6.5.1 The TPI CP, TPI MQ, GR, CEI Scope 1, 2 and 3 data of a listed company will be assigned to its private subsidiaries according to Rule 6.5.2. If a company's data cannot be derived, missing data treatment described in Rule 6.6 will be applied.

6.5.2 Private issuers owned by listed parents are assigned their parents' climate transition indicators when at least one of the following conditions is met:

- Same industry: The private subsidiary is in the same Industry as the listed parent, determined by the Refinitiv® Business Classification (TRBC) Business Sector code (4-digit TRBC Hierarchical ID).
- Financial service subsidiary: The private subsidiary provides leasing or lending services, or is a corporate financial services arm such as special purpose vehicle (SPV), investment trust, holding company determined by the TRBC Business Sector code and Refinitiv Entity Data. This treatment also holds for captive finance companies that are wholly owned subsidiary that provide financing for their parent company.

6.6 Z-Scores and missing data treatment for Z-Scores

6.6.1 Z-scores are calculated for the Scope 1 and Scope 2 Carbon Emissions Intensity ($CEI_{Scope1\&2}$), Scope 3 Carbon Emissions Intensity (CEI_{Scope3}), TPI Management Quality (MQ) and Green Revenues (GR).

6.6.2 Issuer scores are normalised cross-sectionally to create Z-Scores within each Base Index universe according to:

$$Z_{F,i} = \frac{F_i - \mu_F}{\sigma_F} \quad \text{where} \quad F \in \{CEI_{Scope1\&2}, CEI_{Scope3}, MQ, Log(GR)\} \quad (1)$$

where F_i is the SI factor score of the i^{th} issuer and μ_F and σ_F are its cross-sectional factor mean and standard deviation, respectively.

Z-Scores that are greater (less) than three (minus three) are truncated to a value of three (minus three). Post-truncation, individual Z-Scores are renormalised by the re-application of equation (1).

All Z-Scores, including truncated ones, are included in this re-application. This process is repeated until all Z-Scores lie in a range between plus and minus three.

Companies having no data are excluded from the Z-score calculation processes.

6.6.3 Issuers with missing Carbon Emissions Intensities (for Scope 1 and 2 and for Scope 3) are assigned the lowest 25th percentile Z-Score of their respective TRBC Business Sector with the exception of Financials Scope 3 (See Rule 6.6.4). The lowest 25th percentile score is taken across non-missing Z-Scores of Carbon Emissions Intensities in the sector at the process described in Rule 6.6.2. A Z-Score of -3 is assigned when there are less than three issuers with Z-Scores in the TRBC sector.

6.6.4 Scope 3 emissions estimation models have not been extended to cover financial sector issuers. All bonds issued by entities assigned a TRBC of Financials (TRBC 55), including those with disclosed Scope 3, are assigned a Z-score of -3 to reflect their under-estimated emissions.

6.6.5 Issuers with missing TPI MQ scores are assigned neutral scores (Z-Score of zero).

6.6.6 Issuers with no Green Revenues are assigned a Z-Score of -3.

- 6.6.7 Academic Institutions, Charity or Social Organisation and Hospital that are assigned a TRBC of 631020 “Schools, Colleges & Universities”, or TRBC of 611010 “Institutions, Associations & Organizations”, or 561020 “Healthcare Providers and Services” that are private issuers are kept neutral and are not subject to missing data treatment.

Section 7

Index methodology

7. Index methodology

7.1 The ESG data inputs used in the calculation of the FTSE Fixed Income EU Climate Benchmarks Index Series are updated either on a monthly, quarterly or annual basis. The update frequency for each input is detailed in Section 5. Index constituent market value weights are rebalanced at each month-end based on changes in the Base Index composition and to reflect the issuer tilting described in Rule 7.2.4.

7.2 Index weights

7.2.1 Constituent market value weights in the FTSE Fixed Income EU Climate Benchmarks Index Series are calculated using the following index targets, which are designed to align with the PAB and CTB Minimum Requirements and the following Additional Objectives:

Paris-aligned (PAB) Minimum Requirements	Index Targets
Minimum carbon emissions reduction relative to Base Index (see Rule 7.2.2 and Appendix B)	50% – Carbon Intensity (Scope 1 & 2) 50% – Carbon Intensity (Scope 3)
Minimum geometric average annual carbon emissions reduction relative to the index base year (see Appendix B)	7% – Carbon Intensity (Scope 1 & 2) 7% – Carbon Intensity (Scope 3) (applies after 2020 Base Year)
Climate Transition (CTB) Minimum Requirements	Index Targets
Minimum carbon emissions reduction relative to the Base Index (see Rule 7.2.2 and Appendix B)	30% – Carbon Intensity (Scope 1 & 2) 30% – Carbon Intensity (Scope 3)
Minimum geometric average annual carbon emissions reduction relative to the index base year (see Appendix B)	7% – Carbon Intensity (Scope 1 & 2) 7% – Carbon Intensity (Scope 3) (applies after 2020 Base Year)
Additional Objectives (for PAB and CTB indices)	Index Targets and Objectives
Corporate Target Setting: TPI MQ score improvement	0.2σ *
Corporate Target Setting: TPI Carbon Performance Not Aligned companies	0 weight
Green Revenue improvement	$\geq 100\%$
Increase in Green Bond exposure	<i>No Target Set</i> ⁹
Active weight in TRBC Banks sector (5510)	≤ 0

* σ is the standard deviation of the score in the Base Index universe.

See Appendix A for a full list of exclusions.

⁹ Additional Green Bond overweight is achieved without specific targets.

7.2.2 Minimum carbon emissions reduction relative to underlying base Index and minimum average carbon emissions reduction relative to the index base year apply a 0.5% buffer to allow drift between targeted and realised emission targets (see Appendix B for further details).

7.2.3 The Fixed Income EU Climate Benchmarks Index Series employs a base year of 2020 for the application of the minimum average carbon emissions reduction relative to the index base year.

The first assessment period to meet the PAB and CTB index minimum requirements will be measured on an annual basis starting from the first index review in the calendar year following the launch of the index.

Should EU or UK regulations evolve and if any change in the calculation methodology of GHG intensity or absolute GHG emissions occur, a new base year may be selected.

7.2.4 Constituent market value weightings in the FTSE Fixed Income EU Climate Benchmarks Index Series are determined using the FTSE Target Exposure methodology. The market value weight of each constituent is determined as:

$$w_i = \frac{v_i}{\sum_j v_j}$$

where $v_i = w_i \times S_{CEIScope_{1,2},i}^{a_1} \times S_{CEIScope_{3},i}^{a_2} \times S_{MQ,i}^b \times S_{GR,i}^c \times M_{CP,i} \times M_{GBR,i} \times M_{GB,i} \times C_i$

and

- w_i is the market capitalisation weight of bond i in the Base Index,
- $S_{CEIScope_{1,2},i}, S_{CEIScope_{3},i}, S_{MQ,i}, S_{GR,i}$ are natural exponents of bond i issuers' corresponding Z-scores detailed in Rule 6.6,
- $M_{CP,i}$ are multipliers based on bond i issuers' TPI CP scores detailed in Rule 6.3.3,
- $M_{GBR,i}$ are multipliers based on bond i issuers' Green Bond Ratio (GBR) detailed in Rule 6.2.1, where $M_{GBR,i} = 1 + GBR_i$,
- $M_{GB,i}$ are additional tilts on specific CBI-Labelled Green Bond detailed in Rule 6.2.2,
- C_i are corrective tilts to satisfy sector and issuer constraints,
- a_1, a_2, b and c are tilt-strengths that are determined to achieve climate targets,
- w_i is floored at 0.1 bps.

For details of the FTSE Target Exposure methodology, see [FTSE Global Factor Index Series](#).

7.2.5 FTSE Fixed Income EU Climate Benchmarks Index Series also applies below constraints:

Index	Industry*	Max Issuer Weight (%)	Max Issuer Capacity Ratio	Min Issue Weight (b.p.)
FTSE WorldBIG PAB Corporate Bond Index	+/- 10%	5	10	0.1
FTSE EuroBIG PAB Corporate Bond Index	+/- 10%	3	10	0.1
FTSE USBIG PAB Corporate Bond Index	+/- 10%	5	10	0.1
FTSE WorldBIG CTB Corporate Bond Index	+/- 10%	5	10	0.1
FTSE EuroBIG CTB Corporate Bond Index	+/- 10%	3	10	0.1

Index	Industry*	Max Issuer Weight (%)	Max Issuer Capacity Ratio	Min Issue Weight (b.p.)
FTSE USBIG CTB Corporate Bond Index	+/- 10%	5	10	0.1

* Industry is determined based on TRBC Economic Sectors Code (2-digit TRBC Hierarchical ID). Industry weight changes due to exclusions are exceptions to the sector constraint.

7.2.6 At each month-end rebalancing, constraints and targets may be relaxed if not all constraints and targets are met. The industry constraint is relaxed first at a 1% interval until a maximum +/- 20% band is reached. If there is no feasible solution at +/- 20% industry maximum, GR and MQ targets are reduced by 2.5% up to a maximum of 40 times. PAB or CTB minimum requirements will not be relaxed at this stage.

7.2.7 If there is no feasible solution after Rule 7.2.6 is applied, PAB or CTB minimum emission requirements are reduced by 2.5% of their original value and the weighting process detailed in Rules 7.2.4 and 7.2.6 is repeated until a valid solution is achieved.

7.2.8 In the event that PAB or CTB minimum requirements are relaxed during the month-end index rebalancing, the PAB adjustments and targets would be applied at the next month-end rebalance. See Appendix B for further details.

7.3 Index history

7.3.1 Company carbon emissions data are lagged for one year before the end of April 2022.

7.3.2 TPI data as of September 2018 are used in the calculation of index weights prior to 2018.

7.3.3 Sustainalytics data as of December 2020 are used for exclusions in index back history.

7.3.4 The inception date of the indices within the FTSE Fixed Income EU Climate Benchmarks Index Series are as follow:

FTSE Fixed Income EU Climate Benchmarks Index	Inception Date
FTSE WorldBIG PAB Corporate Bond Index FTSE WorldBIG CTB Corporate Bond Index	September 30, 2015
FTSE EuroBIG PAB Corporate Bond Index FTSE EuroBIG CTB Corporate Bond Index	September 30, 2015
FTSE USBIG PAB Corporate Bond Index FTSE USBIG CTB Corporate Bond Index	September 30, 2015

Appendix A

Paris-aligned exclusions and Climate Transition exclusions

FTSE Russell excludes issuers with activity in the product involvement categories outlined below. The exclusions are reviewed monthly at each index rebalance date. Data for the FTSE Paris-Aligned (PAB) and Climate Transition (CTB) index exclusions are sourced from Sustainalytics, TRBC and COBS.

Data from all three sources, Sustainalytics, TRBC and COBS, are mapped at a direct issuer level. In cases where direct issuer Sustainalytics data are not available, the issuer's parent involvement data will be used. Corporate issuers with missing product involvement data are excluded from the index.

Paris-aligned (PAB) Minimum Standards	FTSE Paris-aligned (PAB) Index Exclusions		
Exclusions	Definition	Revenue Threshold	
Controversial Weapons	Companies that produce anti-personnel mines, cluster munitions, and/or biological and chemical weapons.	Greater than 0% of revenues	
Tobacco activities	Companies that manufacture tobacco products.	Greater than 0% of revenues	
	Companies/Issuers assigned the following TRBC code:		
	TRBC	TRBC Hierarchy	TRBC Hierarchical ID
	Tobacco	Industry	54102030
	Companies/Issuers assigned the following FTSE COBS code:		
	COBS	Description	
	TOBC	Tobacco	
Coal: 1 % or more of revenues from exploration, mining, extraction, distribution or refining of hard coal & lignite	Coal Extraction The company extracts thermal coal.	Greater than 0% of revenues	
	Coal Supporting Products & Services The company provides tailor-made products and services that support thermal coal extraction.		
	Companies/Issuers assigned the following TRBC code:		
	TRBC	TRBC Hierarchy	TRBC Hierarchical ID
	Coal	Industry Group	501010

Paris-aligned (PAB) Minimum Standards	FTSE Paris-aligned (PAB) Index Exclusions		
Oil & Gas: – 10 % or more of revenues from the exploration, extraction, distribution or refining oil fuels; – 50 % or more of revenues from the exploration, extraction, manufacturing or distribution of hydrocarbons, hydrogen and carbon monoxide mixtures present in gaseous state;	Oil & Gas Production Companies involved in oil and gas exploration, production, refining, transportation and/or storage.	Greater than or equal to 10% of revenues	
	Oil & Gas Supporting Products & Services Companies providing tailor-made products and services that support oil and gas exploration, production, refining, transportation, and storage.		
	Companies/Issuers assigned the following TRBC codes:		
	TRBC	TRBC Hierarchy	TRBC Hierarchical ID
	Oil & Gas	Industry Group	501020
	Oil & Gas Related Equipment and Services	Industry Group	501030
	Companies/Issuers assigned the following FTSE COBS codes:		
	COBS	Description	
	SOGP	Secondary Oil & Gas Producers	
	OILE	Oil Equipment	
OILS	Oil Service		
OILR	Oil Refining & Marketing		
OILI	Integrated Oil		
PPAN	Retail Propane Distributors		
GASL	Gas Utility – Local Distributors		
Electricity producers: carbon intensity of lifecycle GHG emissions > 100 gCO ₂ e/kWh (50%+ revenues)	Oil & Gas Generation Thermal Coal Power Generation Companies generating electricity from oil and/or gas, and/or thermal coal.	Greater than or equal to 50% of revenues	
Additional exclusions	Oil Sands Extraction The companies that extract oil sands.	Greater than or equal to 50% of revenues	
Climate Transition (CTB) Minimum Standards	FTSE Climate Transition (CTB) Index Exclusions		
Exclusions	Definition	Revenue Threshold	
Controversial Weapons	Companies involved in the core weapon system or components/services of the core weapon system that are considered tailor-made and essential for the lethal use of the controversial weapons. This includes landmines, cluster munitions, nuclear, chemical and biological weapons.	Greater than 0% of revenues	
Tobacco activities	Tobacco Producers: Companies that produce tobacco products.	Greater than 0% of revenues	
Companies/Issuers assigned the following TRBC code:			
TRBC	TRBC Hierarchy	TRBC Hierarchical ID	
Tobacco	Industry	54102030	
Companies/Issuers assigned the following FTSE COBS Code:			
COBS	Description		
TOBC	Tobacco		

Climate Transition (CTB) Minimum Standards	FTSE Climate Transition (CTB) Index Exclusions		
Additional exclusions	Thermal Coal	Companies that extract thermal coal or generate electricity from thermal coal.	
	Oil Sands extraction	Companies that extract oil sands.	
	Companies/Issuers assigned the following TBRC code:		
	TRBC	TRBC Hierarchy	TRBC Hierarchical ID
	Coal	Industry Group	501010

Conduct Exclusions

FTSE Russell excludes issuers involved in controversies related to the UN Global Compact (UNGC) controversies exclusion list outlined below to the underlying eligible universes. This data is provided by third party data vendor, Sustainalytics.

Paris-aligned (PAB) and Climate Transition (CTB) Minimum Standards	FTSE Fixed Income EU Climate Benchmarks Index Series exclusions		
Exclusions	Definition	Exclusion criteria	
UN Global Compact (UNGC) violations	Companies involved in controversies related to the UNGC principles. The principles are classified into four categories: Human Rights, Labor, Environment and Anti-corruption.	All companies deemed to be non-compliant	
Do No Significant Harm	Companies at risk of contributing to severe or systemic and/or systematic violations of international norms and standards related to UNGC principles 7, 8, 9.	All companies assigned Watchlist status	

Appendix B

Carbon emissions

GHG emissions

The FTSE Fixed Income EU Climate Benchmarks Index Series uses Scope 1 and 2 carbon emissions and Scope 3 carbon emissions data.

Carbon emission reduction is measured as the reduction of carbon emissions intensity.

Scope 1 and 2, and Scope 3 carbon emissions intensity is defined as:

- Company total carbon emissions (Scope 1 and 2 or Scope 3) in metric tonnes CO₂ scaled by enterprise value including cash (EVIC, in USD).

Average annual GHG emissions reduction relative to the Index base year

The FTSE Fixed Income EU Climate Benchmarks Index Series requires an average annual GHG intensity reduction relative to the Index Base Year.

The average carbon emissions intensity reduction relative to the Index Base Year is calculated as the weighted average emission (WA_EM) over the previous year's level, adjusted for inflation. The inflation adjustment factor (IAF) considers changes in average EVIC across issuers that have reported emissions intensity values of the current year versus the average EVIC of the base year. The calculation is based on issuers that are in both index profiles to avoid changes caused by issuers entering or exiting the index. The average carbon emissions intensity reduction is defined as:

$$1 - \left(\frac{WA_EM_t}{WA_EM_{t_0}} \times IAF_t \right)^{\frac{1}{t-t_0}}$$

where t_0 is the base year, t is the current review year, and the inflation adjustment factor IAF_t is calculated on a monthly basis as:

$$IAF_t = \frac{\text{Average EVIC}_t \text{ of issuers in } (profile_t \cap profile_{t_0})}{\text{Average EVIC}_{t_0} \text{ of issuers in } (profile_t \cap profile_{t_0})}$$

Index GHG emissions targets

At review, the index emission intensity targets¹⁰ are set as the lower of (1) Emission Reduction Relative to Benchmark and (2) Emission Trajectory Target, where:

$$\text{Emission Reduction Relative to Benchmark} = (1 - r - b) \times \text{Benchmark Emission Intensity}$$

$$\text{Emission Trajectory Target} = [(1 - 7\%)^{t-t_0} - b] \times WA_EM_{t_0} \times \frac{1}{IAF_t}$$

where $b = 0.5\%$ is the buffer to allow for drift between targeted and realised targets and r is the minimum carbon emission intensity reduction relative to underlying Index as set out in Section 7.

¹⁰ Target for Scope 3 emissions is calculated separately from Scope 1 and 2.

Appendix C

Chronological summary of events

FTSE Fixed Income EU Climate Benchmarks Index event summary

Year	Highlight
2023	March 2023: FTSE Fixed Income EU Climate Benchmarks Index Series is introduced.
	October 2023: Adjustment on carbon intensity score based on TPI Carbon Performance is removed from index weights calculation.

Appendix D

Further information

For further information on the FTSE Fixed Income EU Climate Benchmarks Index Series visit www.lseg.com/en/ftse-russell/ or e-mail info@ftserussell.com. Contact details can also be found on this website.

Website: www.lseg.com/en/ftse-russell/

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