

FTSE Phoenix Climate Aware 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 Phoenix Climate Aware Index Series. Copies of these Ground Rules are available from [FTSE Russell Custom Index Methodologies | FTSE Russell](#) for FTSE Russell Custom Index Methodologies.

1.2 These Ground Rules should be read in conjunction with the:

- FTSE Global Equity Index Series Ground Rules
- FTSE UK Index Series Ground Rules
- FTSE Global Factor Index Series Ground Rules
- Russell US Equity Indexes Methodology

and the Corporate Actions and Events Guide for Non Market Cap Weighted Indexes, which are available at www.lseg.com/en/ftse-russell/.

1.3 Price and Total Return Indexes will be calculated on an end-of-day basis.

1.4 The base currency of all indexes is US Dollars (USD). Index values may also be published in other currencies.

1.5 The FTSE Phoenix Climate Aware Index Series takes account of ESG factors in its index design (see Section 4).

If a tilting approach is used for an ESG data input, the objective is for the index methodology to overweight and/or underweight constituents according to specific ESG criteria. This approach will not remove all companies with exposure to a specific ESG activity or sector.

1.6 FTSE Russell

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, The Yield Book Inc and Beyond Ratings.

1.7 FTSE Russell hereby notifies users of the index series that it is possible that circumstances, including external events beyond the control of FTSE Russell, may necessitate changes to, or the cessation of, the index series and therefore, any financial contracts or other financial instruments that reference the index series or investment funds which use the benchmark to measure their performance should be able to withstand, or otherwise address the possibility of changes to, or cessation of, the index series.

1.8 Index users who choose to follow this index series or to buy products that claim to follow this index should assess the merits of the index series' 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 for any losses, damages, claims and expenses suffered by any person as a result of:

- any reliance on these Ground Rules;
- any inaccuracies in these Ground Rules;

- 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 series or any constituent data.

Section 2

Management responsibilities

2. Management responsibilities

2.1 FTSE International Limited (FTSE)

2.1.1 FTSE is the benchmark administrator of the index series¹.

2.1.2 FTSE is responsible for the daily calculation, production and operation of the index, 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 reviews of the index series and apply the changes resulting from the reviews as required by the Ground Rules;
- publish changes to the constituent weightings resulting from their ongoing maintenance and the periodic reviews; and
- disseminate the index series.

2.1.3 These Ground Rules set out the methodology and provide information about the publication of the FTSE Phoenix Climate Aware Index Series.

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 Equity Indexes, 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 Ground Rules should subsequently be updated to provide greater clarity.

¹ 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).

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 Corporate Actions and Events Guide

3.2 Full details of changes to constituent companies due to corporate actions and events can be accessed in the Corporate Actions and Events Guide for Non-Market Cap Weighted Indexes using the following link:

[Corporate Actions and Events Guide for Non Market Cap Weighted Indices.pdf](#)

3.3 Statement of Principles for FTSE Russell Equity Indexes (the Statement of Principles)

Indexes need to keep abreast of changing markets and the Ground Rules cannot anticipate every eventuality. Where the Ground Rules do not fully cover a specific event or development, FTSE Russell will determine the appropriate treatment by reference to the Statement of Principles, 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 FTSE Russell's Index Governance Board.

The Statement of Principles can be accessed using the following link:

[Statement_of_Principles.pdf](#)

3.4 Queries and Complaints

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

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

3.5 Index Policy for Trading Halts and Market Closures

3.5.1 Guidance for the treatment of index changes in the event of trading halts or market closures can be found using the following link:

[Index Policy for Trading Halts and Market Closures.pdf](#)

3.6 Index Policy in the Event Clients are Unable to Trade a Market or a Security

3.6.1 Details of FTSE Russell's treatment can be accessed using the following link:

[Index Policy in the Event Clients are Unable to Trade a Market or a Security.pdf](#)

3.7 Recalculation Policy and Guidelines

3.7.1 Where an inaccuracy is identified, FTSE Russell will follow the steps set out in the FTSE Russell Index Recalculation Guidelines when determining whether an index or index series should be recalculated and/or associated data products reissued. Users of the FTSE Phoenix Climate Aware Index Series will be notified through appropriate media.

For further information, refer to the FTSE Russell Recalculation Policy and Guidelines document, which is available from the FTSE Russell website using the link below or by contacting info@ftserussell.com.

[Recalculation Policy and Guidelines Equity Indexes.pdf](#)

3.8 Policy for Benchmark Methodology Changes

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

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

3.9 FTSE Russell Governance Framework

3.9.1 To oversee its indexes, 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 defence risk management framework and is designed to meet the requirements of the IOSCO Principles for Financial Benchmarks², the European benchmark regulation³ and the UK benchmark regulation⁴. The FTSE Russell Governance Framework can be accessed using the following link:

[FTSE Russell Governance Framework.pdf](#)

3.10 Real Time Status Definitions

3.10.1 For indices that are calculated in real time, please refer to the following guide for details of real time status definitions:

[Real Time Status Definitions.pdf](#)

² IOSCO Principles for Financial Benchmarks Final Report, FR07/13 July 2013.

³ 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.

⁴ The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019.

Section 4

ESG data inputs

4. ESG data inputs

4.1.1 The following ESG datasets are used in the construction of the indices.

ESG data inputs	Details	Used for selection, weighting or exclusion ⁵
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: ftse-green-revenues-classification-system.pdf	Weighting
FTSE Carbon Reserves	FTSE Carbon Reserves data model provides granular coverage of fossil fuel reserve ownership among publicly listed companies in developed markets and emerging economies. More information can be found here: Guide to FTSE and Third Party ESG Data used in FTSE Russell Indices	Weighting
FTSE Carbon Emissions	The FTSE Carbon Emissions Dataset provides reported and estimated 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 ESG Data used in FTSE Russell Indices	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 (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
Product-related data – FTSE Russell	FTSE exclusion lists on the activities of companies with exposure to specific products or services. More information can be found in Section 7 of the Guide to the Construction and Maintenance of FTSE Exclusion Lists.pdf .	Exclusion

⁵ 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 companies from the index.

ESG data inputs	Details	Used for selection, weighting or exclusion ⁵
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

4.1.2 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.

Section 5

Climate transition indicators

5. Climate transition indicators

5.1 Green Revenues (GR)

- 5.1.1 The Green Revenues (GR) score is the ratio of revenues as classified by the FTSE Green Revenues Classification System to total revenue based on the FTSE Russell Green Revenue 2.0 data model.
- 5.1.2 The FTSE Green Revenues application excludes any Green Revenues from tier three activities. Tier three activities are defined as micro sectors, which have some environmental benefits but are overall net neutral or negative.
- 5.1.3 All constituent securities are assigned a FTSE Green Revenues ratio value. 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; and
 - 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.

5.2 The Transition Pathway Initiative (TPI)

- 5.2.1 TPI assesses companies' progress on the transition to a low-carbon economy on two dimensions: Management Quality (MQ) and Carbon Performance (CP).
- 5.2.2 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:
<https://www.transitionpathwayinitiative.org/methodology>
- 5.2.3 Companies that receive a CP assessment are categorized into different groups, which are described in the [Guide to FTSE and Third Party ESG Data used in FTSE Russell Indices](#) and are provided by TPI on an annual basis.

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 yet assessed	1.0 (neutral)

5.3 Operational carbon emissions intensity (OE)

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

5.4 Potential emissions: fossil fuel reserve intensity (R)

Fossil fuel reserve intensity is defined as the estimated CO₂ equivalent GHG emissions in metric tonnes generated by the combustion of a company's fossil fuel reserves, divided by its full company market capitalisation (in USD). The data cut-off date for the availability of fossil fuel reserve intensity is the close of business on the last business day of the month prior to the review month.

5.5 Z-scores and missing data treatment

5.5.1 Z-scores are calculated for green revenue, operational carbon emissions intensity (OE), fossil fuel reserve intensity (R) and TPI management quality (MQ).

5.5.2 Individual stock quantities are normalised cross-sectionally to create Z-scores within each underlying universe according to:

$$Z_{F,i} = \frac{F_i - \mu_F}{\sigma_F} \quad \text{where} \quad F \in \{Log(GR), OE, Log(R), MQ\} \quad (1)$$

where F_i is the F -quantity of the i^{th} stock 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 reapplication of equation (1).

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

Companies with missing data are excluded from this process.

5.5.3 Companies in the following ICB subsectors which do not have fossil fuel reserve data available are assigned the average Z-score of all companies in this group of sub-sectors. If there are no companies in this group of subsectors with reserve data, a Z-score of 0 is assigned.

- Integrated oil and gas (ICB: 60101000)
- Oil: crude producers (ICB: 60101010)
- Offshore drilling and other services (ICB: 60101015)
- Oil refining and marketing (ICB: 60101020)
- Oil equipment and services (ICB: 60101030)
- Pipelines (ICB: 60101035) Other companies with no Fossil Fuel Reserve are assigned a Z-Score of -3 for their Fossil Fuel Reserve and not included in the Z-Score calculation process of these two indicators.

5.5.4 Stocks with missing operational carbon emissions intensities are assigned the average Z-score of their ICB sector. The average is taken across non missing Z-scores of operational carbon emissions intensities in the sector at the process described in rule 5.5.2. A Z-score of zero is assigned when there are less than three stocks with Z-scores in the ICB sector.

5.5.5 Stocks with missing TPI Management Quality (MQ) scores are assigned the average Z-score of their country. The average is taken across non-missing Z-scores of MQ scores in the country at the process described in rule 5.5.2. A Z-score of zero is assigned when there are less than three stocks with Z-scores in the country.

Section 6

Eligible securities

6. Eligible securities

6.1.1 The eligible securities of each FTSE Phoenix Climate Aware Index are the constituents of the corresponding underlying index shown in table one.

6.1.2 Securities that are members of the applicable exclusion list (see Appendix A) are not eligible for membership of the relevant index.

6.2 Multiple lines

6.2.1 All lines of the same company that are eligible securities are eligible for inclusion in the index.

6.3 FTSE Phoenix Climate Aware Index Series

The FTSE Phoenix Climate Aware Index Series consists of the following core and exclusion only indices:

Index name	Underlying benchmark index	Exclusion list
Core Indices		Phoenix exclusion list (see Appendix A)
FTSE North America Phoenix Climate Aware Index	FTSE North America Index	
FTSE All Share ex IT Phoenix Climate Aware Index	FTSE All Share ex IT Index	
FTSE 350 Phoenix Climate Aware Index	FTSE 350 ex IT Index	
FTSE 250 Phoenix Climate Aware Index	FTSE 250 ex IT Index	
FTSE 100 Phoenix Climate Aware Index	FTSE 100 ex IT Index	
Exclusion only indices		
FTSE North America Phoenix exclusions Index	FTSE North America Index	
FTSE All Share ex IT Phoenix exclusions Index	FTSE All Share ex It Index	
FTSE 350 Phoenix exclusions Index	FTSE 350 Index	
FTSE 250 Phoenix exclusions Index	FTSE 250 Index	
FTSE 100 Phoenix exclusions Index	FTSE 100 Index	

6.4 Excluded companies

6.4.1 Stocks with missing product and activity involvement data are not excluded from the relevant index universe on Phoenix request. This diverges from FTSE Russell usual index construction practice.

Section 7

Periodic review of constituent companies

7. Periodic review of constituent companies

7.1 Review dates

7.1.1 The FTSE Phoenix Climate Aware Index Series are reviewed annually in September.

FTSE Phoenix Climate Aware Index Series	Review months
Core indices	
FTSE North America Phoenix Climate Aware Index	September
FTSE All Share ex IT Phoenix Climate Aware Index	September
FTSE 100 Phoenix Climate Aware Index	September
FTSE 250 Phoenix Climate Aware Index	September
FTSE 350 Phoenix Climate Aware Index	September
Exclusion only indices	
FTSE North America Phoenix exclusions index	September
FTSE All Share ex IT Phoenix exclusions index	September
FTSE 350 Phoenix exclusions index	September
FTSE 250 Phoenix exclusions index	September
FTSE 100 Phoenix exclusions index	September

7.1.2 The data cut-off dates for ESG data inputs are in the [Guide-to-FTSE-and-Third-Party-ESG-Data-used-in-FTSE-Russell-Indices.pdf](#)

The calculations described in Appendix B will be recalculated at the annual review using this data cut-off date.

7.1.3 Index reviews will use stock prices available as at the close of business on the Wednesday before the first Friday of the review month (price cut-off date).

7.1.4 The review will be implemented after the close of business on the third Friday of the review month.

7.1.5 Index reviews will incorporate constituent changes associated with reviews of the underlying eligible universe as of the review effective date. Any changes to the status of excluded companies as defined in Appendix A and Appendix B are applied using data as at the close of business on the Monday four weeks prior to review effective date.

7.2 Exclusion lists

7.2.1 Exclusion lists are applied on a quarterly basis in March, June, September and December.

7.2.2 Any changes will be implemented after the close of business on the third Friday of the month (effective the following Monday).

Section 8

Weighting methodology

8. Weighting methodology

8.1 Index weights: Core indices

8.1.1 Weights for the constituents of the FTSE Phoenix Climate Aware Index core indices are set to meet the following requirements:

Climate objectives	Index targets
Operational emission intensity	\leq intensity of the underlying benchmark index
Potential emission intensity	\leq intensity of the underlying benchmark index
Minimum average annual carbon emissions reduction relative to the index base year (see Appendix C)	7% – operational emission 7% – potential emission (Applies after 2019 base year)
Index green revenue	\geq level of the underlying benchmark index
Corporate target setting: TPI Carbon Performance not aligned companies emission reduction	\geq (number of years since 2019) ***5% maximum 100%**
Corporate target setting: TPI MQ score improvement	$0.2\sigma^*$
Corporate target setting: TPI Carbon Performance	1-tilt***
Active weight of each company in ICB subsector banks (30101010)	≤ 0
Active weight in High climate impact sector relative to underlying index in aggregate (see Appendix D)	0

* σ is the standard deviation of the score in the underlying universe.

** 100% reduction will be reached 10 years after base year in 2029.

*** See section 5.2.3 for details of tilt.

Also see Appendix A for exclusions applied.

8.1.2 Minimum average carbon emissions reduction relative to the index base year applies a 0.5% buffer to allow drift between targeted and realized emission targets (see Appendix C).

8.1.3 FTSE Phoenix Climate Aware Index Series core indices employs a base year of 2019 for the application of the minimum average carbon emissions reduction relative to the index base year.

Should a significant change in the calculation methodology of GHG intensity or absolute GHG emissions occur, a new base year may be selected.

8.1.4 FTSE Phoenix Climate Aware Index Series core indices also apply the below constraints:

Index	Country / Industry	Max Stock Weight (%)	Min Stock Weight (b.p.)	Max Capacity Ratio**	Min Effective N*
FTSE North America Phoenix Climate Aware Index	+/- 5%	min(weight in benchmark +2%,10%)	max(weight in benchmark - 2%,0.5bp)	20x	50%
FTSE All Share ex IT Phoenix Climate Aware Index	+/- 5%	min(weight in benchmark +2%,10%)	max(weight in benchmark - 2%,0.5bp)	20x	50%
FTSE 100 Phoenix Climate Aware Index	+/- 5%	min(weight in benchmark +2%,10%)	max(weight in benchmark - 2%,0.5bp)	20x	50%
FTSE 250 Phoenix Climate Aware Index	+/- 5%	min(weight in benchmark +2%,10%)	max(weight in benchmark - 2%,0.5bp)	20x	50%
FTSE 350 Phoenix Climate Aware Index	+/- 5%	min(weight in benchmark +2%,10%)	max(weight in benchmark - 2%,0.5bp)	20x	50%
FTSE North America Phoenix Climate Aware Index	+/- 5%	min(weight in benchmark +2%,10%)	max(weight in benchmark - 2%,0.5bp)	20x	50%

**For details on Effective N and Capacity Ratio see the FTSE Global Factor Index Series Ground Rules Section 6

The banded constraint is +/-5%.

8.1.5 Constituent weightings in the FTSE Phoenix Climate Aware Index Series core indices are determined using FTSE Target Exposure methodology. The weight of the constituent is determined as:

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

where:

$$v_i = w'_i \times S_{GR,i}^a \times S_{OE,i}^b \times S_{R,i}^c \times S_{MQ,i}^d \times CP_i \times C_i \times I_i \times \Phi_i$$

where:

- w'_i is the market capitalisation weight of stock i in the underlying eligible universe.
- $S_{GR,i}, S_{OE,i}, S_{R,i}, S_{MQ,i}$ are natural exponents of the corresponding Z-scores detailed in rule 5.5.
- a, b, c and d are tilt-strength determined at index weighting.
- C_i and I_i are country and industrial ICB tilt respectively.
- Φ_i is the maximum stock capacity/maximum weight tilt.

For details of FTSE Target Exposure methodology, see FTSE Global Factor Index Series.

8.2 Index Weights: Exclusions Only Indices

8.2.1 Constituent weighting in the FTSE Phoenix Climate Aware Index Series exclusion only indices are market cap weighted.

8.3 Relaxation

8.3.1 At each index review, constraints and targets may be relaxed if delivering all constraints and targets are not achievable. If relaxation is required, the FTSE Phoenix Climate Aware Index Series* will follow the following tiered relaxation sequence:

Tier	Target Relaxed	Phoenix Index Design
1	Active weight constraints on TPI CP Not Aligned stocks**	If no solution can be found within the index parameters, the +/- 2% active weight constraint is relaxed in 1% intervals for CP Non-Aligned stocks. This is repeated up to a relative banded constraint +/-10% of the stocks weight in the underlying.
2	Industry & Country (I&C)	If no solution is feasible after the relaxation described above, the industry and country (I&C) banded constraints of +/-5% are relaxed at 1% intervals to a maximum +/-10% band.
3	TPI MQ target and CP tilt	If no solution is feasible after the relaxation described above, the TPI Management Quality uplift target of 0.2σ and the single fixed tilt on TPI Carbon Performance alignment are relaxed. The TPI MQ target is reduced by 2.5% of the original value and the TPI CP fixed tilt strength is reduced by 2.5% of its original value. Relaxation is repeated until valid solution obtained, up to a maximum of 40 times. At maximum relaxation, the index will be targeting MQ TPI target no less than benchmark and the TPI fixed tilt will have been removed (tilt strength 0).
4	Active weight constraints on all stocks	If no solution is feasible after the relaxation described above, the indexes stock constraint of +/- 2% of original index weight is relaxed in 1% intervals. This is repeated up to +/- 10% of the stocks weight in the underlying.
5	Minimum emission requirements	If no solution is feasible after the relaxation described above, all constraints/targets are reset, and the minimum emission requirements are reduced by 2.5% of their original value and the weighting process detailed in Rules 8.1.5 and 8.1.6 is re-attempted. This process is repeated until a valid solution is achieved.

* These requirements do not apply to FTSE North America Phoenix exclusions index, FTSE All Share IT Phoenix exclusions index, FTSE 350 Phoenix exclusions index, FTSE 250 Phoenix exclusions index, FTSE 100 Phoenix exclusions index

** Note due to the 'glide path' target for Not Aligned stocks, this relaxation becomes irrelevant after year 20.

8.4 Index back-histories

8.4.1 Company carbon emissions data is lagged for one year before the end of April 2022.

8.4.2 TPI data as of September 2018 is used in the index review process prior to 2018.

Section 9

Changes to constituent companies

9. Changes to constituent companies

9.1 Intra-review additions

9.1.1 Additions to the underlying index will be considered for inclusion at the next annual review.

9.2 Intra-review deletions

9.2.1 A constituent will be removed from the FTSE Phoenix Climate Aware Index Series if it is removed from the underlying universe. A minimum of two days' notice will be provided. The weight of the removed constituent will be distributed pro-rata amongst the remaining constituents in the relevant index.

9.3 Intra-review changes to exclusion lists

9.3.1 A constituent will be removed from the FTSE Phoenix Climate Aware Index Series if it is added to a relevant exclusion list. The deletion will be concurrent with its addition to the exclusion list.

9.3.2 A stock that is removed from a relevant exclusion list will be considered for inclusion at the next annual review.

Section 10

Corporate actions and events

10. Corporate actions and events

10.1 If a constituent has a stock split, stock consolidation, rights issue, bonus issue, a change in the number of shares in issue or a change in free float, the constituent's weighting in the FTSE Phoenix Climate Aware Index Series remains unchanged pre and post such an event.

10.2 Full details of changes to constituent companies due to corporate actions and events can be accessed in the Corporate Actions and Events Guide for Non Market Capitalisation Weighted Indexes using the following link:

[Corporate Actions and Events Guide for Non Market Cap Weighted Indices.pdf](#)

A corporate action is an action on shareholders with a prescribed ex-date. The share price will be subject to an adjustment on the ex-date. These include the following:

- capital repayments;
- rights issues/entitlement offers;
- stock conversion;
- splits (sub-division)/reverse splits (consolidation); and
- scrip issues (capitalisation or bonus issue).

A corporate event is a reaction to company news (event) that may impact the index depending on the index rules. For example, a company announces a strategic shareholder is offering to sell their shares (secondary share offer) – this could result in a free float weighting change in the index. Where an index adjustment is required, FTSE Russell will provide notice advising of the timing of the change.

10.3 Suspension of dealing

Suspension of dealing rules can be found within the Corporate Actions and Events Guide for Non Market Capitalisation Weighted Indexes.

10.4 Takeovers, mergers and demergers

The treatment of takeovers, mergers and demergers can be found within the Corporate Actions and Events Guide for Non Market Capitalisation Weighted Indexes.

Section 11

Treatment of dividends

11. Treatment of dividends

11.1 Declared dividends are used to calculate the Standard Total Return Index of FTSE Phoenix Climate Aware Index Series. All dividends are applied as at the ex-div date.

11.2 Net-of-tax Total Return Indexes are also calculated based on dividends received following deduction of withholding tax at the rates applicable to a UK pension fund that benefits from double-taxation treaties.

Withholding tax rates used in the net-of-tax indexes can be accessed using the following link:

[Withholding Tax Service](#)

Please also refer to the FTSE Russell Withholding Tax Guide which can be accessed using the following link:

[FTSE Russell Withholding Tax Guide.pdf](#)

Section 12

Industry Classification Benchmark (ICB)

12. Industry Classification Benchmark (ICB)⁶

12.1 Classification structure

- 12.1.1 The FTSE Phoenix Climate Aware Index Series constituents are classified into industries, supersectors, sectors and subsectors, as defined by the ICB.
- 12.1.2 Details of the ICB are available from FTSE Russell and published on the FTSE Russell website (www.lseg.com/en/ftse-russell/) and can be accessed using the following link:
[Industry Classification Benchmark](#)

⁶ Russell indexes migrated to the new ICB classification system in September 2020 and FTSE indexes migrated in March 2021.

Section 13

Indexes algorithm and calculation method

13. Indexes algorithm and calculation method

13.1 Prices

13.1.1 The FTSE Phoenix Climate Aware Index Series uses actual closing mid-market or last trade prices, where available, for securities with local market quotations. Further details can be accessed using the following link:

[Closing Prices Used For Index Calculation.pdf](#)

13.2 Calculation frequency

13.2.1 The FTSE Phoenix Climate Aware Index Series will be calculated on an end-of-day basis and displayed to eight decimal points.

13.3 Index calculation

13.3.1 The FTSE Phoenix Climate Aware Index Series are calculated using the algorithm described below:

Where:

- $i=1,2,\dots,N$
- N is the number of securities in the index.
- p_i is the latest trade price of the component security (or the price at the close of the index on the previous day).
- e_i is the exchange rate required to convert the security's currency into the index's base currency.
- s_i is the number of shares in issue used by FTSE Russell for the security, as defined in these Ground Rules.
- f_i is the investability weighting factor to be applied to a security to allow amendments to its weighting, expressed as a number between 0 and 1, where 1 represents a 100% free float. This factor is published by FTSE Russell for each security in the underlying index.
- c_i is the weight adjustment factor (WAF) to be applied to a security to correctly weight that security in the index. This factor maps the investable market capitalisation of each stock to a notional market capitalisation for inclusion in the index.
- d is the divisor, a figure that represents the total issued share capital of the index at the base date. The divisor can be adjusted to allow changes in the issued share capital of individual securities to be made without distorting the index.

Appendix A

Phoenix exclusions

Product involvement exclusions

At each index review date, companies with the business activities listed in the table below are excluded from the eligible universe. Data for the FTSE Phoenix Climate Aware Index Series exclusions is sourced from FTSE Russell and Sustainalytics.

FTSE Phoenix Climate Aware Index Series exclusions			
Baseline exclusions	Definition	Revenue threshold applied	Source
Controversial Weapons	Anti-personnel mines: Companies that produce anti-personnel mines as defined in the “1997 Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction”, or that produce specific and critical parts or services for anti-personnel mines.	Greater than 0% of revenues	FTSE Russell
	Biological & Chemical weapons: Companies that produce chemical or biological weapons, or that produce specific and critical parts or services for chemical or biological weapons.		
	Cluster Munitions: Companies that produce cluster munitions as defined in the Convention on Cluster Munitions, or that produce specific and critical parts or services for cluster munitions.		
Depleted uranium	Depleted Uranium (DU) munitions are projectiles (bullets, rockets, etc.) that have been equipped with the radioactive chemical substance DU. Because of its high density, DU is often used as a penetrator in ammunition to help pierce armour. However, areas where depleted uranium munitions have been used are exposed to its radioactive qualities, causing people living in the area to be more prone to cancers, congenital birth defects, and other illnesses	Any level of involvement: (essential, tailor-made, tailor-made ownership, non-essential, non -tailormade, non-tailormade ownership	Sustainalytics
Tobacco activities	Production: The company manufactures tobacco products	Greater than or equal to 1% of revenues	Sustainalytics
Climate activity exclusions			
Thermal coal extraction and power generation	<p>Coal Production and extraction, and thermal coal power generation: companies extracting and mining thermal coal, thermal coal exploration</p> <p>Company generating electricity from thermal coal, owning/operating coal-fired power plants</p>	<p>The sum is greater than or equal to 20% of revenues</p> <p>Waiver: Thermal coal producers with sum of revenue share between 20-30% are not excluded if assessed by CP in any of the following categories:</p> <ul style="list-style-type: none"> • 1.5 Degrees Scenario • 2 Degrees scenario • Below 2 Degrees scenario 	Sustainalytics

FTSE Phoenix Climate Aware Index Series exclusions			
Baseline exclusions	Definition	Revenue threshold applied	Source
Arctic exploration	Companies involved in oil and gas exploration in Arctic regions	Greater than or equal to 20% of revenues	Sustainalytics
Oil sands production	Companies extracting oil sands	Greater than or equal to 20% of revenues	Sustainalytics

For further details on FTSE Russell and/or Sustainalytics data, please refer to Section 4. Companies not covered by FTSE Russell and/or Sustainalytics are not excluded from FTSE Phoenix Climate Aware Index Series.

Appendix B

Carbon emissions

GHG emissions: the FTSE Phoenix Climate Aware Index Series uses operational carbon emissions (Scope 1 and 2) and potential carbon emissions from fossil fuel reserve as a proxy for Scope 3 GHG emissions.

Operational carbon emission reduction is measured as the reduction of operational carbon emissions intensity.

Potential carbon emission reduction is measured as the reduction of potential carbon emissions intensity.

Operational carbon emissions intensity is defined as:

Company total operational carbon emissions in metric tonnes CO₂ scaled by enterprise value including (EVIC) cash (USD).

Potential carbon emissions intensity is defined as:

Company total CO₂ equivalent of the fossil fuel reserve in metric tonnes CO₂ scaled by full company market capitalisation (USD).

Average annual GHG emissions reduction relative to base year of the index

The FTSE Phoenix Climate Aware Index Series requires an average annual GHG intensity reduction relative to base year of the index. This applies to both operational emissions intensity and potential carbon emissions intensity.

The average operational carbon emissions intensity reduction relative to base year of the index is calculated as the weighted average operational emission (WA_EM) over the previous year's level, adjusted for inflation by the average of stock enterprise value including cash (AVG_EVIC). That is:

$$1 - \left(\frac{WA_EM_t}{WA_EM_{t_0}} \div \frac{AVG_EVIC_{t_0}}{AVG_EVIC_t} \right)^{\frac{1}{t-t_0}}$$

where t_0 is the base year and t is current review year.

The average annual potential carbon emissions intensity reduction relative to base year of the index is calculated as the weighted average potential emission (WA_PEM) compared to the base year's level:

$$1 - \left(\frac{WA_PEM_t}{WA_PEM_{t_0}} \right)^{\frac{1}{t-t_0}}$$

Index GHG emissions targets

At review, the index emission intensity target is set as the lower of (1) operational emission reduction relative to benchmark and (2) operational emission trajectory target, where:

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

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

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 8.

The index potential emission target is set as the lower of (1) potential emission reduction relative to benchmark and (2) potential emission trajectory target, where:

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

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

Appendix C

High climate impact sector

FTSE Phoenix Climate Aware Index Series will maintain equal active weight in high climate impact and low climate impact sectors, relative to the underlying index. As per the delegated acts for EU climate benchmarks (A19a to A19d of the consolidated European Benchmarks Regulation), securities in NACE sector codes A, B, C, D, E, F, G, H, L are classified as high climate impact, whereas securities in NACE sector codes I, J, K, M, N O, P, Q, R, S, T are classified as low climate impact.

FTSE Russell has mapped NACE classes to ICB according to the following steps:

- The NACE exposure of each ICB 4 subsector is determined.
- ICB company classifications are then cross-referenced with the Refinitiv Worldscope Fundamentals database providing the NACE sector of segmental revenues, in order to map the percentage of company revenues of each ICB level four subsector aligning to a NACE level one sector.
- In the cases where ICB level four subsector revenues are split between one or more NACE sectors, the NACE and ICB definitions are used to determine the appropriate NACE mapping.

** These requirements do not apply to FTSE North America Phoenix exclusions index, FTSE All Share ex IT Phoenix exclusions index, FTSE 350 Phoenix exclusions index, FTSE 250 Phoenix exclusions index, FTSE 100 Phoenix exclusions index*

The mapping is provided below:

ICB four	Name	NACE	Classification
10101015	Software	J	Low climate impact
10101020	Consumer digital services	J	Low climate impact
10102010	Semiconductors	C	High climate impact
10102015	Electronic components	C	High climate impact
10102020	Production technology equipment	C	High climate impact
10102030	Computer hardware	C	High climate impact
10102035	Electronic office equipment	C	High climate impact
15101010	Telecommunications equipment	C	High climate impact
15102010	Cable television services	J	Low climate impact
15102015	Telecommunications services	J	Low climate impact
20101010	Healthcare providers	Q	Low climate impact
20101020	Healthcare management services	Q	Low climate impact
20101025	Healthcare services	Q	Low climate impact
20101030	Healthcare: miscellaneous	Q	Low climate impact
20102010	Medical equipment	C	High climate impact
20102015	Medical supplies	C	High climate impact

ICB four	Name	NACE	Classification
20102020	Medical services	Q	Low climate impact
20103010	Biotechnology	M	Low climate impact
20103015	Pharmaceuticals	C	High climate impact
20103020	Marijuana producers	C	High climate impact
30101010	Banks	K	Low climate impact
30201020	Consumer lending	K	Low climate impact
30201025	Mortgage finance	K	Low climate impact
30201030	Financial data providers	K	Low climate impact
30202000	Diversified financial services	K	Low climate impact
30202010	Asset managers and custodians	K	Low climate impact
30202015	Investment services	K	Low climate impact
30203000	Mortgage REITs: diversified	L	High climate impact
30203010	Mortgage REITs: commercial	L	High climate impact
30203020	Mortgage REITs: residential	L	High climate impact
30204000	Closed-end investments	K	Low climate impact
30205000	Open-end and miscellaneous investment vehicles	K	Low climate impact
30301010	Life insurance	K	Low climate impact
30302010	Full line insurance	K	Low climate impact
30302015	Insurance brokers	K	Low climate impact
30302020	Reinsurance	K	Low climate impact
30302025	Property and casualty insurance	K	Low climate impact
35101010	Real estate holding and development	L	High climate impact
35101015	Real estate services	L	High climate impact
35102000	Diversified REITs	L	High climate impact
35102010	Healthcare REITs	L	High climate impact
35102015	Hotel and lodging REITs	L	High climate impact
35102020	Industrial REITs	L	High climate impact
35102025	Infrastructure REITs	L	High climate impact
35102030	Office REITs	L	High climate impact
35102040	Residential REITs	L	High climate impact
35102045	Retail REITs	L	High climate impact
35102050	Storage REITs	H	High climate impact
35102060	Timber REITs	A	High climate impact
35102070	Other specialty REITs	L	High climate impact
40101010	Auto services	G	High climate impact
40101015	Tyres	C	High climate impact
40101020	Automobiles	C	High climate impact
40101025	Auto parts	C	High climate impact
40201010	Education services	P	Low climate impact

ICB four	Name	NACE	Classification
40201020	Funeral parlours and cemetery	S	Low climate impact
40201040	Rental and leasing services: consumer	N	Low climate impact
40201060	Vending and catering service	I	Low climate impact
40201070	Consumer services: miscellaneous	G	High climate impact
40202010	Home construction	F	High climate impact
40202015	Household furnishings	C	High climate impact
40202020	Household appliance	C	High climate impact
40202025	Household equipment and products	C	High climate impact
40203010	Consumer electronics	C	High climate impact
40203040	Electronic entertainment	C	High climate impact
40203045	Toys	C	High climate impact
40203050	Recreational products	C	High climate impact
40203055	Recreational vehicles and boats	C	High climate impact
40203060	Photography	C	High climate impact
40204020	Clothing and accessories	C	High climate impact
40204025	Footwear	C	High climate impact
40204030	Luxury items	C	High climate impact
40204035	Cosmetics	C	High climate impact
40301010	Entertainment	J	Low climate impact
40301020	Media agencies	J	Low climate impact
40301030	Publishing	J	Low climate impact
40301035	Radio and TV broadcasters	J	Low climate impact
40401010	Diversified retailers	G	High climate impact
40401020	Apparel retailers	G	High climate impact
40401025	Home Improvement retailers	G	High climate impact
40401030	Specialty retailers	G	High climate impact
40501010	Airlines	H	High climate impact
40501015	Travel and tourism	H	High climate impact
40501020	Casinos and gambling	R	Low climate impact
40501025	Hotels and motels	I	Low climate impact
40501030	Recreational services	R	Low climate impact
40501040	Restaurants and bars	R	Low climate impact
45101010	Brewers	C	High climate impact
45101015	Distillers and vintners	C	High climate impact
45101020	Soft drinks	C	High climate impact
45102010	Farming, fishing, ranching and plantations	A	High climate impact
45102020	Food products	C	High climate impact
45102030	Fruit and grain processing	C	High climate impact
45102035	Sugar	C	High climate impact

ICB four	Name	NACE	Classification
45103010	Tobacco	C	High climate impact
45201010	Food retailers and wholesalers	G	High climate impact
45201015	Drug retailers	G	High climate impact
45201020	Personal products	C	High climate impact
45201030	Nondurable household products	C	High climate impact
45201040	Miscellaneous consumer staple goods	G	High climate impact
50101010	Construction	F	High climate impact
50101015	Engineering and contracting services	F	High climate impact
50101020	Building, roofing/wallboard and plumbing	C	High climate impact
50101025	Building: climate control	C	High climate impact
50101030	Cement	C	High climate impact
50101035	Building materials: other	C	High climate impact
50201010	Aerospace	C	High climate impact
50201020	Defence	C	High climate impact
50202010	Electrical components	C	High climate impact
50202020	Electronic equipment: control and filter	C	High climate impact
50202025	Electronic equipment: gauges and meters	C	High climate impact
50202030	Electronic equipment: pollution control	C	High climate impact
50202040	Electronic equipment: other	C	High climate impact
50203000	Diversified industrials	C	High climate impact
50203010	Paints and coatings	C	High climate impact
50203015	Plastics	C	High climate impact
50203020	Glass	C	High climate impact
50203030	Containers and packaging	C	High climate impact
50204000	Machinery: industrial	C	High climate impact
50204010	Machinery: agricultural	C	High climate impact
50204020	Machinery: construction and handling	C	High climate impact
50204030	Machinery: engines	C	High climate impact
50204040	Machinery: tools	C	High climate impact
50204050	Machinery: specialty	C	High climate impact
50205010	Industrial suppliers	G	High climate impact
50205015	Transaction processing services	K	Low climate impact
50205020	Professional business support services	N	Low climate impact
50205025	Business training and employment agencies	N	Low climate impact
50205030	Forms and bulk printing services	C	High climate impact
50205040	Security services	N	Low climate impact
50206010	Trucking	H	High climate impact
50206015	Commercial vehicles and parts	C	High climate impact
50206020	Railroads	H	High climate impact

ICB four	Name	NACE	Classification
50206025	Railroad equipment	C	High climate impact
50206030	Marine transportation	H	High climate impact
50206040	Delivery services	H	High climate impact
50206050	Commercial vehicle-equipment leasing	N	Low climate impact
50206060	Transportation services	H	High climate impact
55101000	Diversified materials	C	High climate impact
55101010	Forestry	A	High climate impact
55101015	Paper	C	High climate impact
55101020	Textile products	C	High climate impact
55102000	General mining	B	High climate impact
55102010	Iron and steel	C	High climate impact
55102015	Metal fabricating	C	High climate impact
55102035	Aluminum	C	High climate impact
55102040	Copper	B	High climate impact
55102050	Nonferrous metals	B	High climate impact
55103020	Diamonds and gemstones	B	High climate impact
55103025	Gold mining	B	High climate impact
55103030	Platinum and precious metals	B	High climate impact
55201000	Chemicals: diversified	C	High climate impact
55201010	Chemicals and synthetic fibres	C	High climate impact
55201015	Fertilisers	C	High climate impact
55201020	Specialty chemicals	C	High climate impact
60101000	Integrated oil and gas	C	High climate impact
60101010	Oil: crude producers	B	High climate impact
60101015	Offshore drilling and other services	B	High climate impact
60101020	Oil refining and marketing	C	High climate impact
60101030	Oil equipment and services	B	High climate impact
60101035	Pipelines	H	High climate impact
60101040	Coal	B	High climate impact
60102010	Alternative fuels	C	High climate impact
60102020	Renewable energy equipment	C	High climate impact
65101010	Alternative electricity	D	High climate impact
65101015	Conventional electricity	D	High climate impact
65102000	Multi-utilities	D	High climate impact
65102020	Gas distribution	D	High climate impact
65102030	Water	E	High climate impact
65103035	Waste and disposal services	E	High climate impact

Appendix D

Further information

A Glossary of Terms used in FTSE Russell's ground rule documents can be found using the following link:

[Glossary.pdf](#)

The FTSE Russell ESG Metrics website can be found using the following link:

[ESG Metrics](#)

For further information on the FTSE Phoenix Climate Aware Index Series visit <https://www.lseg.com/en/ftse-russell> or e-mail info@ftserussell.com. Contact details can also be found on this website.

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