

FTSE Custom Developed TPI ex FF ex Korea ex Poland Index

v1.6



Contents

Section 1 Introduction	3
Section 2 Management responsibilities	5
Section 3 FTSE Russell index policies	6
Section 4 Eligible securities	8
Section 5 ESG data inputs.....	9
Section 6 Index construction.....	10
Section 7 Periodic review of constituents	13
Section 8 Changes to constituent companies.....	14
Section 9 Corporate actions and events.....	15
Section 10 Indices algorithm and calculation method	16
Appendix A Exclusions	17
Appendix B Further information	18

Section 1

Introduction

1. Introduction

- 1.1 This document sets out the Ground Rules for the construction and management of the FTSE Custom Developed TPI ex FF ex Korea ex Poland Index. Copies of the Ground Rules are available from www.lseg.com/en/ftse-russell/. TPI stands for the Transition Pathway Initiative.
- 1.2 The FTSE Custom Developed TPI ex FF ex Korea ex Poland Index is designed to reflect the performance of the FTSE Custom Developed ex Korea ex Poland Index while incorporating a tilting methodology that adjusts index weights according to a specific set of TPI and climate data.
- The FTSE Custom Developed TPI ex FF ex Korea ex Poland Index is not designed to align with the minimum requirements of the EU Climate Transition Benchmarks, nor the EU Paris aligned Benchmarks¹.
- 1.2.1 The FTSE Custom Developed TPI ex FF ex Korea ex Poland Index does take account of ESG factors in its design.
- If a tilting approach is used for a 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.
- 1.3 These Ground Rules should be read in conjunction with the following index rules and guides which are available at www.lseg.com/en/ftse-russell/:
- FTSE Global Equity Index Series Ground Rules
 - The Corporate Actions and Events Guide for Non Market Capitalisation Weighted Indices
 - FTSE Global Factor Index Series Ground Rules
 - FTSE EU Climate Benchmarks Index Series
 - FTSE Global Climate Index Series Ground Rules
 - FTSE Green Revenues Index Series Ground Rules
 - FTSE Infrastructure Index Series Rules
- 1.4 Price and Total Return Indices will be calculated on an end of day basis. The base currency of the index is US Dollars (USD) and may also be published in other currencies. Total return indices include income based on ex dividend adjustments. All dividends are applied as declared in the FTSE Total Return Index.
- 1.5 FTSE Russell**
- 1.5.1 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

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](#).

Income Europe Limited), FTSE Fixed Income LLC, FTSE (Beijing) Consulting Limited, Refinitiv Benchmark Services (UK) Limited, Refinitiv Limited and Beyond Ratings.

- 1.5.2 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 index series to measure their performance should be able to withstand, or otherwise address the possibility of changes to, or cessation of, the index series.
- 1.5.3 Index users who choose to follow this index series or to buy products that claim to follow this index series 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 (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 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.²

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 periodic index reviews of the Index 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;
- 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 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.

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).

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:

[Queries and Complaints Policy.pdf](#)

3.2 Index Policy for Trading Halts and Market Closures

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](#)

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

3.3.1 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](#)

3.4 Recalculation Policy and Guidelines

3.4.1 The FTSE Custom Developed TPI ex FF ex Korea ex Poland Index is recalculated whenever inaccuracies occur that are deemed to be significant. Users of the FTSE Custom Developed TPI ex FF ex Korea ex Poland Index are notified through appropriate media.

For further information please refer to the FTSE Russell Recalculation Policy and Guidelines document which is available on the FTSE Russell website using the link below:

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

3.5 Recalculation Policy and Guidelines – ESG Data and Scores

Where an inaccuracy in ESG data is identified, FTSE Russell will follow the guidelines set out in this document when determining if ESG Data should be recalculated.

[Recalculation Policy and Guidelines ESG Products.pdf](#)

3.6 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](#)

3.7 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 defence 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](#)

3.8 Real Time Status Definitions

3.8.1 Please refer to the following guide for details of real time status definitions for indices that are calculated in real time.

[Real Time Status Definitions.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

Eligible securities

4. Eligible securities

4.1 The eligible universe of the index is made up of the constituents in the corresponding underlying index after the application of the exclusion lists detailed in Table 1. A summary of the exclusions categories is provided below and more detail is provided in Appendix A.

Table 1: List of Indices

Index Name	Underlying Universe	Exclusion List(s)
FTSE Custom Developed TPI ex FF ex Korea ex Poland Index	FTSE Developed ex Korea ex Poland Index	Controversial Weapons Fossil Fuels "No data" companies

4.2 Excluded companies

4.2.1 Product and activity involvement data are collected from publicly available information by FTSE Russell analysts. Where data is not obtained by FTSE Russell analysts, external sources are used to supplement the data including from Sustainalytics.

4.3 Multiple lines

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

Section 5

ESG data inputs

5. ESG data inputs

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

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: 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
Product related data- FTSE Russell	FTSE exclusion lists on the activities of companies with exposure to the products or services that are listed in Section 7 of the Guide to the Construction and Maintenance of FTSE Exclusion Lists.pdf .	Exclusion
Trucost Carbon emissions and carbon reserves data	Trucost environmental data measures environmental impact including greenhouse gas emissions and fossil fuel reserves. More information can be found: https://www.marketplace.spglobal.com/en/datasets/trucost-environmental-(46)	Weighting

5.1.1 Further information on ESG data provided by FTSE Russell and third parties used in this index 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.

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 companies from the index.

Section 6

Index construction

6. Index construction

6.1 The Transition Pathway Initiative (TPI)

- 6.1.1 TPI assesses companies' progress on the transition to a low-carbon economy on two dimensions: Management Quality and Carbon Performance.
- 6.1.2 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. 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
- 6.1.3 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, 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.

6.2 Index construction

- 6.2.1 The unconstrained index weight of each constituent in the FTSE Custom Developed TPI ex FF ex Korea ex Poland Index w_i is:

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

where:

$$v_i = w_i' \times A_i^{FF} \times A_i^{CE} \times A_i^{GR} \times A_i^{MQ} \times A_i^{CP}$$

and

- w_i' is the free float adjusted market capitalisation weight of stock i in the eligible universe
 - A_i^{FF} is the Fossil Fuel Reserve adjustment for stock i (see Rule 6.2.3)
 - A_i^{CE} is the Low Operational Carbon Emissions adjustment for stock i (see Rule 6.2.3)
 - A_i^{GR} is the Green Revenue adjustment for stock i (see Rule 6.2.3)
 - A_i^{MQ} is the TPI Management Quality adjustment for stock i (see Rule 6.2.4)
 - A_i^{CP} is the TPI Carbon Performance adjustment for stock i (see Rule 6.2.5)
- 6.2.2 The FTSE Custom Developed TPI ex FF ex Korea ex Poland Index is constructed using the Fixed Tilt methodology, meaning the strength of the factor tilt is a fixed number for all rebalances.
- See [FTSE Global Factor Index Series](#) for more details on Index Construction.

6.2.3 **Fossil Fuel Reserves** tilts, **Operational Carbon Emissions** tilts and **Green Revenue** tilts are based on each company's fossil fuel reserves, operational carbon emissions and the FTSE Green Revenues Factor, respectively. These tilts follow the definitions and methodologies as detailed in FTSE Global Climate Index Series Ground Rules and the FTSE Green Revenues Index Series Ground Rules.

6.2.4 The **TPI Management Quality Adjustment** for stock i is defined as:

$$A_i^{MQ} = (S_i^{MQ})^2 \times w'_k / w_k^{MQ}$$

where Management Quality Z-Scores are mapped to a S-Score $S_i^{MQ} \in [0, 1]$, using the cumulative normal distribution with mean zero and standard deviation one. The creation of S-Scores follows the process described in the FTSE Global Factor Index Series Ground Rules; k is the ICB regional industry that stock i belongs to, w'_k is the free float adjusted market capitalisation regional industry weight of the eligible universe and w_k^{MQ} is the regional industry weight determined by applying a double tilt using the S-score S_i^{MQ} to the free float adjusted market capitalisation stock weights of the underlying universe.

The FTSE Custom Developed TPI ex FF ex Korea ex Poland Index splits the eligible universe into the following regions: North America, Europe, Middle East and Africa, and Asia-Pacific.

6.2.5 The **TPI Carbon Performance** Adjustment A_i^{CP} is assigned to each of the groups detailed in Rule 5.1.3 as following:

- Companies that are aligned to below 2°C (Pulp and Paper) or 1.5°C (all other sectors) are assigned an adjustment factor of 2
- Companies that are aligned to 2°C (Pulp and Paper) or 2°C (all other sector) are assigned an adjustment factor of 1.5
- Companies are aligned to the Paris Pledges (Pulp and Paper), or National Pledges/International Pledges (all other sectors) level are assigned an adjustment factor of 0.8
- Companies that are not aligned or have insufficient disclosures to enable such an assessment are assigned an adjustment factor of 0
- Companies that are not aligned or have insufficient disclosures to enable such an assessment are assigned an adjustment factor of 0

6.3 Capacity constraints and minimum stock weights

6.3.1 The maximum stock level capacity ratio and constraints are applied to the index without narrowing as detailed in the FTSE Global Factor Index Series Ground Rules.

6.3.2 Any company that is aligned to below 2°C/1.5°C or 2°C/below 2°C in the TPI Carbon Performance assessment with the index weight less than 0.5bps is set as 0.5bps.

6.3.3 A minimum stock level weight of 0.5bps is then applied to the remaining constituents that are not covered in Rule 6.3.2. **Error! Reference source not found.** Any security level index weight that is less than this minimum weight threshold is treated as having a zero weight in the FTSE Custom Developed TPI ex FF ex Korea ex Poland Index, any resulting excess weight will be redistributed amongst the remaining constituents and may cause breaches of the constraints in Rule 6.3.1.

6.4 Country and industry exposure constraints

6.4.1 The maximum active country and industry exposure constraints are defined by the parameters P and Q are applied to the index as detailed in the FTSE Global Factor Index Series Ground Rules.

Index back-histories

6.4.2 The annual Fossil Fuel Reserves, Operational Carbon Emissions and annual sales data prior to June 2017 are lagged by one year.

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

6.5 Fixed tilts

6.5.1 Table 1 displays the parameters used in the index.

Table 1: Fixed Tilt Index Parameters

Index	Tilt strengths					Constraints				
	Fossil Fuel Reserves	Operational Carbon Emission Intensity	Green Revenue	TPI Management Quality	TPI Carbon Performance	P**	Q**	Max Stock Weight (%)	Min Stock weight (b.p.)	Max Capacity Ratio
FTSE Custom Developed TPI ex FF ex Korea ex Poland Index	1	1	1	2	1	0.2	0.05	-	0.5*	<20x

* See Rule 6.3 for more detail

** See Rule 6.4 for more detail

Section 7

Periodic review of constituents

7. Periodic review of constituents

7.1 Review dates

- 7.1.1 The FTSE Custom Developed TPI ex FF ex Korea ex Poland Index will be reviewed annually in September. 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](#)
- 7.1.2 Index reviews will use stock prices available at the close of business on the Wednesday before the first Friday of the review month (price cut-off date) and use shares and free float adjustment as of effective date.
- 7.1.3 The review will be implemented after the close of business on the third Friday of the review month.

Section 8

Changes to constituent companies

8. Changes to constituent companies

8.1 Intra-review additions

8.1.1 The FTSE Custom Developed TPI ex FF ex Korea ex Poland Index will not accept intra-review additions. Additions to the underlying index will be considered for inclusion at the next annual review.

8.2 Intra-review deletions

8.2.1 A constituent will be removed from the FTSE Custom Developed TPI ex FF ex Korea ex Poland Index (with a minimum of 2 days' notice) if it is being removed from its underlying index and its weight will be distributed pro-rata amongst the remaining constituents of the FTSE Custom Developed TPI ex FF ex Korea ex Poland Index.

8.3 Intra-review changes to exclusion lists

8.3.1 A constituent will be deleted from the FTSE Custom Developed TPI ex FF ex Korea ex Poland Index if it is added to the corresponding exclusion lists detailed in table 1 in Rule 4.1. The deletion will be concurrent with its addition to the exclusion lists.

8.3.2 A stock that is removed from a relevant exclusion list detailed in table 1 in Rule 4.1 will be considered for inclusion at the next periodic review.

Section 9

Corporate actions and events

9. Corporate actions and events

9.1 If a constituent in the underlying index 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 Custom Developed TPI ex FF ex Korea ex Poland Index will remain unchanged pre and post such an event.

9.2 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 Indices 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. The index will be adjusted in line with the ex date.

These include the following:

- Capital Repayments
- Rights Issues/Entitlement Offers
- Stock Conversion
- Splits (sub-division)/Reverse splits (consolidation)
- 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 will provide notice advising of the timing of the change.

9.3 **Suspension of dealing**

Suspension of Dealing rules can be found within the Corporate Actions and Events Guide for Non Market Cap Weighted Indices.

9.4 **Takeovers, mergers and demergers**

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

Section 10

Indices algorithm and calculation method

10. Indices algorithm and calculation method

10.1 Prices

10.1.1 The FTSE Custom Developed TPI ex FF ex Korea ex Poland Index 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](#)

10.2 Calculation frequency

10.2.1 The FTSE Custom Developed TPI ex FF ex Korea ex Poland Index will be calculated on an end of day basis and displayed to eight decimal points.

10.3 Index calculation

10.3.1 The FTSE Custom Developed TPI ex FF ex Korea ex Poland Index calculated using the algorithm described below:

$$\sum_{i=1}^N \frac{(p_i \times e_i \times s_i \times f_i \times c_i)}{d}$$

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 Weighting Factor 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

Exclusions

Product involvement	
Non-Renewable Energy	
Fossil Fuels	Companies which: <ul style="list-style-type: none"> – Have clear evidence of reserve ownership – Companies producing coal – Companies producing oil and gas – Companies involved in the ICB subsectors 530 (Oil & Gas) and SIC code 1211 and 1221
Weapons	
Chemical & Biological 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.
Anti-Personnel Landmines	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.
No Data	
“No data” companies	Companies marked with no-data or recently IPO

Appendix B

Further information

A Glossary of Terms used in FTSE Russell's Ground Rules 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 contact details please visit the FTSE Russell website or contact FTSE Russell client services at info@ftserussell.com.

Website: <http://www.lseg.com/en/ftse-russell/>

Disclaimer

© 2024 London Stock Exchange Group plc and its applicable group undertakings ("LSEG"). LSEG includes (1) FTSE International Limited ("FTSE"), (2) Frank Russell Company ("Russell"), (3) FTSE Global Debt Capital Markets Inc. and FTSE Global Debt Capital Markets Limited (together, "FTSE Canada"), (4) FTSE Fixed Income Europe Limited ("FTSE FI Europe"), (5) FTSE Fixed Income LLC ("FTSE FI"), (6) FTSE (Beijing) Consulting Limited ("WOFE"), (7) Refinitiv Benchmark Services (UK) Limited ("RBSL"), (8) Refinitiv Limited ("RL") and (9) Beyond Ratings S.A.S. ("BR"). All rights reserved.

The FTSE Custom Developed TPI ex FF ex Korea ex Poland Index is calculated by or on behalf of FTSE International Limited or its affiliate, agent or partner. FTSE International Limited is authorised and regulated by the Financial Conduct Authority as a benchmark administrator. Refinitiv Benchmark Services (UK) Limited is authorised and regulated by the Financial Conduct Authority as a benchmark administrator.

FTSE Russell® is a trading name of FTSE, Russell, FTSE Canada, FTSE FI, FTSE FI Europe, WOFE, RBSL, RL and BR. "FTSE®", "Russell®", "FTSE Russell®", "FTSE4Good®", "ICB®", "WMTM", "FR™", "Beyond Ratings®" and all other trademarks and service marks used herein (whether registered or unregistered) are trade marks and/or service marks owned or licensed by the applicable member of LSEG or their respective licensors and are owned, or used under licence, by FTSE, Russell, FTSE Canada, FTSE FI, FTSE FI Europe, WOFE, RBSL, RL or BR.

All information is provided for information purposes only. All information and data contained in this publication is obtained by LSEG, from sources believed by it to be accurate and reliable. Because of the possibility of human and mechanical inaccuracy as well as other factors, however, such information and data is provided "as is" without warranty of any kind. No member of LSEG nor their respective directors, officers, employees, partners or licensors make any claim, prediction, warranty or representation whatsoever, expressly or impliedly, either as to the accuracy, timeliness, completeness, merchantability of any information or LSEG Products, or of results to be obtained from the use of LSEG products, including but not limited to indices, rates, data and analytics, or the fitness or suitability of the LSEG products for any particular purpose to which they might be put. The user of the information assumes the entire risk of any use it may make or permit to be made of the information.

No responsibility or liability can be accepted by any member of LSEG nor their respective directors, officers, employees, partners or licensors for (a) any loss or damage in whole or in part caused by, resulting from, or relating to any inaccuracy (negligent or otherwise) or other circumstance involved in procuring, collecting, compiling, interpreting, analysing, editing, transcribing, transmitting, communicating or delivering any such information or data or from use of this document or links to this document or (b) any direct, indirect, special, consequential or incidental damages whatsoever, even if any member of LSEG is advised in advance of the possibility of such damages, resulting from the use of, or inability to use, such information.

No member of LSEG nor their respective directors, officers, employees, partners or licensors provide investment advice and nothing in this document should be taken as constituting financial or investment advice. No member of LSEG nor their respective directors, officers, employees, partners, or licensors make any representation regarding the advisability of investing in any asset or whether such investment creates any legal or compliance risks for the investor. A decision to invest in any such asset should not be made in reliance on any information herein. Indices and rates cannot be invested in directly. Inclusion of an asset in an index or rate is not a recommendation to buy, sell or hold that asset nor confirmation that any particular investor may lawfully buy, sell or hold the asset or an index or rate containing the asset. The general information contained in this publication should not be acted upon without obtaining specific legal, tax, and investment advice from a licensed professional.

No part of this information may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the applicable member of LSEG. Use and distribution of LSEG data requires a licence from LSEG and/or its licensors.

