

Guide to FTSE and Third Party ESG Data used in FTSE Indices

v2.5

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Section 1

Introduction

1. Introduction

1.1 This document provides details of the ESG data sets used in the construction and maintenance of FTSE Russell ESG indices.

1.1.1 The Guide includes information about both data provided by FTSE Russell and third parties.

1.2 FTSE Russell

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 this Guide) for any losses, damages, claims and expenses suffered by any person as a result of:

- any reliance on this Guide, and/or
- any inaccuracies in this Guide, and/or
- any non-application or misapplication of the policies or procedures described in this Guide.

1.3 Data cut-off dates for ESG data sets used in FTSE indices

The data cut-off date for each ESG data set is shown below. The data cut-off date is defined as the date that data is received from the vendor ahead of the index review. Data vendors provide the latest available assessments at this cut-off date, subject to their research cycle and coverage. These dates vary by vendor, depending on receipt of data from the vendor, data disclosure due to company reporting, scoring timings and frequency of index reviews.

ESG data set	Cut-off date
FTSE Carbon Emissions Scope 1 and 2 data	3 rd Friday of the month prior to the review month
LSEG Carbon Emissions Scope 3 data	3 rd Friday of the month, two months prior to the September review
FTSE Carbon Reserves	2 nd Friday of the month prior to the review month
FTSE ESG Scores	3rd Friday of the month prior to the June and December reviews FTSE ESG scores are based on the Annual Report and Corporate Sustainability Report (CSR), or Integrated report, published by the last business day of March (for the June review) and September (for the December Review). The following rules apply to data collection: • A company’s Annual Report, Sustainability Report and other ESG information (with the exception of CDP reports) needs to be published with the same

ESG data set	Cut-off date
	fiscal year for an ESG score to be updated ahead of an index review. If a company reports to CDP and marks their report as public to CDP, and if the report pertaining to the same fiscal year has not yet been made available to FTSE Russell, the previous fiscal year's report will be used.
FTSE product related data	Last business day of the month, two months prior to the review month
FTSE conduct related data	Last business day of the month, two months prior to the review month
LSEG Green Revenues	1 st Friday of the month prior to the review month
LSEG D&I Scores	Last business day of the month prior to the review month
Measurabl data	Last business day of the month prior to the review month
LSEG ESG data	Last business day of the month prior to the review month
Sustainalytics conduct related data (Global Standards Screening (GSS) and Controversy Ratings), and product related data (Product Involvement (PI) and Controversial Weapons Radar (CWR))	Last business day of the month, two months prior to the review month
Sustainable Development Investing (SDI) data	1 st business day of the quarter (March, June, September and December)
TPI Management Quality (MQ) scores	1st Friday of the month prior to the September review TPI MQ scores are updated annually and are based on reports published by the last business day of March. All reports need to be published with the same fiscal year. A company's Annual Report and Sustainability Report need to be published with the same fiscal year. If a company reports to CDP and marks their report as public to CDP, and if the report pertaining to the same fiscal year has not yet been made available to FTSE Russell, the previous fiscal year's report will be used.
TPI Carbon Performance (CP) data	Two weeks prior to the last business day of the month prior to the September review.
TruCost carbon data	Last business day of the month prior to review month
Freedom House data	The public data is updated in March. For equity indices, this is received on the last business day of the month, two months prior to the review month
FTSE Climate Collective Transition Assessment	Scores are provided annually by 15 th January
LSEG Climate Risk Assessment	Scores are provided annually by 15 th September
LSEG Sustainable Sovereign Risk Assessment	Scores are provided in January, April, July and October, by the 15 th of the month
LSEG SDG Factor-In	Scores are provided annually by 15 th June
LSEG Climate KPIs	Indicators are provided by 15 th June
Varieties of Democracy (V-Dem)	The public data is updated in March

ESG data set	Cut-off date
World Bank's World Governance Indicators	The public data is updated in November and integrated by the 15 th December
Global Footprint Network data	Country overshoot days are provided by the 22 nd April
AXA Climate data	Protected Areas dataset is provided by mid-April

For other ESG data sets, the data cut-off date is the last business day of the month prior to the review month.

Individual Ground Rules include the index review cut-off date, which is the date that data feeds into index reviews.

Section 2

ESG data sets used in FTSE indices

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2.1 ASCOR

ASCOR assesses sovereign exposure to climate related risks and opportunities. More information can be found here: [ASCOR Project](#)

2.2 AXA Climate

AXA Climate is a subsidiary of the AXA Group that provides an indicator with the percentage of protected areas. For more information: [AXA Climate](#)

2.3 CDP

2.3.1 Corporate Climate Survey Disclosures

FTSE Russell uses a variety of corporate climate disclosures from the Carbon Disclosure Project (CDP). This data is reported by companies using a survey developed by CDP. CDP encourages companies to report data that has been verified by third party providers according to international internationally-recognised standards, including relevant ISO or ISAE standards. The survey is collected annually by the CDP followed by an internal quality exercise and additional derived data analysis.

CDP publishes this reporting guidance [Scoring 2023 - short explainer.pdf \(cdp.net\)](#).

2.3.2 Data use

CDP data is used as an input to these data sets:

- Inputs into the FTSE ESG data model. In this instance, the CDP datapoints are subject to the quality control procedures outlined in section 4.3;
- Inputs into the Carbon Emissions data model. Data is checked for issues with respect to identifiers, as well as screened for volatility and outliers.

2.4 Climate Bonds Initiative (CBI) data set

2.4.1 FTSE Russell uses the green bond tag from CBI and green bond data via Refinitiv distribution.

2.4.2 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: <https://www.climatebonds.net/data-insights/publications/climate-bonds-initiative-green-bond-database-methodology>

2.5 Freedom House Data

Freedom House is a non-profit organization that publishes an annual [Freedom in the World](#) report and assesses each country's degree of political freedoms and civil liberties.

Freedom House assesses countries as either "Free", "Partly Free" or "Not Free". The assessments are updated on an annual basis in April.

Further information can be found here: <https://freedomhouse.org/reports/freedom-world/freedom-world-research-methodology> and <https://freedomhouse.org/countries/nations-transit/scores?sort=asc&order=Total%20Score%20and%20Status>

2.6 FTSE Russell data sets

Summary of FTSE ESG data sets:

ESG data sets	Details	Are the data reported and/or modelled ?	Verification and quality of the data	Reference standards used
FTSE ESG Scores	The FTSE Russell ESG Data Model aims to assess corporate 'ESG exposure and performance', both in terms of measuring the impact of the scored entity on the external environment (e.g. through theme and pillar Exposures) and measuring the scored entity's risk exposure or resilience to ESG-related risks (e.g. through pillar and theme Scores). Further information: https://www.lseg.com/content/dam/ftse-russell/en_us/documents/policy-documents/ftse-russell-esg-data-model-methodology.pdf	Reported	https://www.lseg.com/content/dam/ftse-russell/en_us/documents/policy-documents/ftse-russell-esg-data-model-methodology.pdf	https://www.lseg.com/content/dam/ftse-russell/en_us/documents/policy-documents/ftse-russell-esg-data-model-methodology.pdf
Transition Pathway Initiative Management Quality score	FTSE Russell uses the methodology developed by the Grantham Institute at the London School of Economics to calculate Management Quality (MQ) Scores used by the Transition Pathway Initiative (TPI). The TPI MQ methodology assesses the quality of companies' management of their greenhouse gas emissions and of risks and opportunities related to the low-carbon transition. FTSE Russell currently uses version 4.0 of the TPI MQ methodology. The methodology is published here: https://www.transitionpathwayinitiative.org/methodology Further information can be found here: https://www.transitionpathwayinitiative.org/	Reported	These scores use datapoints incorporated within the FTSE ESG Scores Model and as such the same quality control processes apply in their calculation.	https://www.transitionpathwayinitiative.org/methodology
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 in Section 4.	Reported and modelled	Appendix A	Appendix A
FTSE Carbon Emissions scope 1 and 2	The FTSE Carbon Emissions Dataset provides reported and estimated Scope 1 and Scope 2 emissions data	Reported and modelled	Appendix B	Appendix B

ESG data sets	Details	Are the data reported and/or modelled ?	Verification and quality of the data	Reference standards used
	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 in Section 5.			
FTSE product related data	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 (ftserussell.com).	Reported	Guide to the Construction and Maintenance of Exclusion Lists used in FTSE Russell Indices	Guide to the Construction and Maintenance of Exclusion Lists used in FTSE Russell Indices
FTSE Climate Collective Transition Assessment Methodology	The FTSE Climate Collective Transition Assessment Methodology (CCTAM) is a relative scoring model that evaluates sovereign exposure to climate transition risks. Utilizing the framework of Assessing Sovereign Climate-related Opportunities and Risks (ASCOR), it aims to highlight countries' performance and alignment with the transition to a low-carbon economy and the Paris Agreement objectives. The methodology is here: FTSE Climate Collective Transition Assessment Methodology	Modelled	FTSE Climate Collective Transition Assessment Methodology . There are quality control checks for data types, coverage and changes.	ASCOR Framework (Assessing Sovereign Climate-related Risk and Opportunities)

2.7 Global Footprint Network

Global Footprint Network is a global standards organization that develops metrics to measure humanity's ecological demand on the planet. It tracks how much nature we use versus what Earth can regenerate, and its Country Overshoot Days dataset shows the date when the world would use a full year of resources if everyone lived like a given country. **Further information can be found here:** <https://www.footprintnetwork.org/2026/01/15/country-overshoot-days-2026/>

2.8 LSEG data sets:

2.8.1 LSEG Green Revenues data model

Green Revenues data model helps investors understand the global industrial transition to a green and low carbon economy with consistent, transparent data and indices. Companies are analysed and categorised using the Green Revenues Classification System (GRCS) on green products and services. For each company with green products or services identified, the Model provides data points on company green revenue percentages (including minimum, maximum and point estimate) and micro sector green revenue percentages for each green product or service offered by the company.

Data is reported and modelled. For more information including on quality measures: [Green Revenues Data Model Methodology](#)

2.8.2 Green Revenues Ratio Construction

The Green Revenues ratio for a company is:

The ratio of green revenues as classified by the Green Revenues Classification System to total revenue;

Where an index utilises a variant of the Green Revenues ratio in their construction, this will be described in that Index's Ground Rules. In general, green revenues from Tier 3 micro sectors are excluded for index construction.

All constituent securities are assigned an FTSE Green Revenues ratio value. The Green Revenues ratio can be:

Zero if a constituent company has no exposure to the Green Economy;

A non-zero value, when exact Green Revenues were disclosed by a constituent company;

The minimum of the stated range of possible Green Revenues, when a company discloses insufficient information for a precise determination of the Green Revenues ratio;

The company-specific estimate of the Green Revenues, when a company discloses insufficient information for a precise determination of the Green Revenues ratio and estimation methodology is used to produce a point estimate for the company.

The Green Revenues Data Model measures the "greenness" of products based on product-based international standards that align to each of the micro sector and subsector classifications.

Certifications are considered if the certification is issued by an independent third party and the environmental performance of the product is better than incumbent products' efforts to adapt, mitigate and/or remediate: environmental erosion, resource depletion and/or climate change.

These standards include, but are not limited to:

- **LEED (full suite)**
- **BREEAM**
- **EnergyStar**
- **RSPO**
- **Marine Stewardship Council**
- **Forest Stewardship Council**
- **Organic**
- **FairTrade**
- **Life Cycle Assessment**
- **Sustainable Forestry Initiative**
- **EcoLabel**

- **Green Seal**
- **Nuclear Grade Certifications (i.e. ASME, QSC-597, QSD-665)**
- **BOMA 360**
- **BOMA BEST**
- **CASBEE**
- **DGNB**
- **GPR Gebouw**
- **Green Globes**
- **Green Mark**
- **Green Star**
- **Green Star NZ**
- **Green Star SA**
- **HQE**
- **Miljöbyggnad**
- **SKA Rating**

2.8.3 Worldscope

Worldscope data is used for informational purposes to highlight index constituents that may be involved in key ESG investment areas (i.e. solar, water, defense, vice products). Such companies are subject to further investigation by FTSE Russell analysts. Worldscope financial data be used as an input to carbon emissions intensity calculations.

2.8.4 LSEG ESG data

FTSE Russell uses LSEG ESG Scores and data. This includes data on whether a company is considered a State-Owned Enterprise (SOE).

LSEG ESG scores measure a company's ESG performance based on publicly reported data. More information can be found: [Environmental, social & governance scores guide](#)

2.8.5 LSEG D&I scores

LSEG Diversity and Inclusion (D&I) scores are designed to measure the relative performance of companies based on factors related to diverse and inclusive workplaces. This uses LSEG ESG data and TRBC. More information can be found in Appendix D of this document.

2.8.6 TRBC Sector Classification

FTSE Russell uses TRBC Sector Classification. 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.

Information is available here: <https://www.lseg.com/en/data-analytics/financial-data/indices/trbc-business-classification>

2.8.7 LSEG ESG bond data

FTSE Russell uses LSEG ESG bond data.

LSEG ESG Bond data covers the four main classification types of Green, Social, Sustainability and Sustainability-Linked Bonds.

2.8.8 LSEG Sovereign Sustainability data sets

FTSE Russell uses country ESG and climate data from LSEG Sovereign Sustainability: [LSEG Sovereign Sustainability Solutions | Data Analytics](#)

2.8.9 LSEG Climate Risk Assessment Methodology

The Climate Risk Assessment Methodology is a quantitative, relative, and systematic approach, based on 15 indicators for 50 countries, divided into three pillars of climate risk and preparedness assessment (i.e., transition risk, physical risk and resilience). More information can be found in this [methodology document](#).

2.8.10 LSEG SDG Factor-In 2.0

SDG Factor-In 2.0 (Sovereign SDG assessment) aims to measure to what extent a country is achieving Sustainable Development Goals (SDGs). More information can be found in this methodology [document](#).

2.8.11 LSEG Sustainable Sovereign Risk Methodology (2SRM)

The Sustainable Sovereign Risk Methodology (2SRM) is a quantitative, relative and systematic approach, based on 36 indicators for 151 countries, divided into three pillars of sustainable sovereign risk assessment. 2SRM is designed to measure ESG financially material risks for sovereign issuers. More information can be found in this [methodology document](#).

2.8.12 LSEG Climate KPIs

LSEG Climate KPIs aim to offer a broad assessment of sovereign climate risks across carbon intensity, transition, and physical risk metrics.

More information can be found in this [methodology document](#).

2.9 Measurabl

Measurabl provide metrics for REIT carbon emissions, energy usage and green certification. The methodology is published here: [Whole Building Estimates Model Methodology.pdf \(measurabl.com\)](#).

2.10 RepRisk AG

2.10.1 Conduct-related screening

FTSE Russell uses RepRisk's online data platform. The platform provides users with company-level scores assessing the level of business conduct risk and reflecting any risk incidents related to a company.

The RepRisk Index (RRI) captures and quantifies a company's reputational risk exposure to ESG issues. More information can be found: <https://www.reprisk.com/news-research/resources/methodology>.

RepRisk data is used as an input to FTSE processes:

- i. As an input to the FTSE UN Global Compact exclusions list.
- ii. As an input to the Controversies Monitor process used within the FTSE4Good Index Series.

In using the RepRisk data, FTSE Russell conducts quality controls including:

- Conducting trend analysis checks to identify outliers in the dataset
- Referring to source documents where large changes could impact index inclusion

2.11 Sustainalytics data sets

2.11.1 Product Involvement Dataset

Sustainalytics Product Involvement data identifies the nature and extent of a company's involvement in a range of product and business activities. This data file includes all applicable categories of involvement (e.g. production, retail, supporting services) for each product area.

More information is available here: www.sustainalytics.com/investor-solutions/esg-research/esg-screening/esg-criteria

Regarding the Sustainalytics Controversial Weapons Radar data, more information is available here: www.sustainalytics.com/investor-solutions/esg-research/esg-screening/controversial-weapons-arms-trade.

2.11.2 Controversial Conduct - Global Standard Screening (GSS) Dataset

Sustainalytics 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 in Appendix C and: <https://www.sustainalytics.com/investor-solutions/esg-research/esg-screening/global-compact-norms-based-screening>.

2.11.3 Controversial Conduct – Controversy Ratings Dataset

Sustainalytics assesses companies' involvement in incidents with negative environmental, social and governance (ESG) implications. The Controversy Ratings reflect a company's level of involvement in issues and how it manages these issues. More information can be found in Appendix D and <https://www.sustainalytics.com/investor-solutions/esg-research/controversies-research>

2.12 Sustainable Development Investments (SDI) Asset Owner Platform SDG revenue data

FTSE Russell uses SDI SDG revenue data from STOXX Ltd. More information on the data methodology is available <https://www.sdi-aop.org/sdi-classification/> and [sdi-aop-taxonomy-and-guidance-september-2023.pdf](https://www.sdi-aop.org/sdi-aop-taxonomy-and-guidance-september-2023.pdf).

2.13 Transition Pathway Initiative (TPI) Carbon Performance

TPI Carbon Performance (CP) Scenario Alignment

TPI CP scenario alignment scores are provided by the TPI Global Climate Transition Centre, which is based at the Grantham Research Institute on Climate Change and the Environment at the London School of Economics and Political Science.

The TPI Carbon Performance (CP) assess 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 categorised based on the alignment of their individually modelled carbon emission pathway with different scenarios.

- 2.13.1 Companies that receive an assessment are categorised based on the alignment of their individually modelled carbon emission pathway with different scenarios.

For companies in Pulp and Paper:

- (i) **Below 2°C aligned:** A company's carbon emissions pathway is aligned with limiting global warming to below 2°C above pre-industrial levels.
- (ii) **2°C aligned:** A company's carbon emissions pathway is aligned with limiting global warming to 2°C above pre-industrial levels.
- (iii) **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
- (iv) **Not aligned:** A company's carbon emissions pathway is not aligned with limiting global warming to 2°C above pre-industrial levels
- (v) **Insufficient disclosure:** A company provides insufficient disclosures to enable an assessment
- (vi) **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):

- (vii) **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".
- (viii) **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.
- (ix) **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
 - A. **Not aligned:** A company's carbon emissions pathway is not aligned with limiting global warming to 2°C above pre-industrial levels
 - B. **Insufficient disclosure:** A company provides insufficient disclosures to enable an assessment
 - C. **Not assessed:** A company has not yet been assessed for its Carbon Performance

More information can be found here: <https://www.transitionpathwayinitiative.org/sectors#methodology>

2.14 Trucost

2.14.1 Carbon Data

FTSE Russell uses carbon emissions and carbon reserves data from Trucost. This data contains information about a company's environmental impact using a mix of disclosed and, where gaps are present, modelled 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-\(46\)](https://www.marketplace.spglobal.com/en/datasets/trucost-environmental-(46)) and https://www.support.marketplace.spglobal.com/en/datasets/alternative/trucost_environmental/trucost_environmental_data_methodology_guide.pdf

2.15 Varieties of Democracy (V-Dem)

Varieties of Democracy (V-Dem) aims to measure democracy and provide a multidimensional and disaggregated dataset that reflects the complexity and different principles of democracy.

Further information can be found here: [V-Dem](#) and [The V-Dem Dataset – V-Dem](#).

2.16 World Bank Indicators

2.16.1 Country ESG performance data

FTSE Russell uses data from the World Bank Worldwide Governance Indicators (WGI) and World Development Indicators (WDI) databases.

The World Bank Worldwide Governance Indicators (WGI) report on six broad dimensions of governance for countries. More information can be found:

<https://info.worldbank.org/governance/wgi/Home/Documents#wgiAggMethodology>

The World Bank World Development Indicators (WDI) provides cross-country comparable data on development. More information can be found: <https://datatopics.worldbank.org/world-development-indicators/sources-and-methods.html>

2.17 Third party data vendors

FTSE Russell has a robust onboarding and due diligence process for our data vendors aligned to Group Data Policy which follows best practices around the management of data. FTSE Russell has a Market Data team to support initial due diligence of data vendors, and a Data Operations team to manage ongoing data due diligence of data.

The due diligence check undertaken on data vendors include:

- i. Quality and reliability of vendor corporate and identifier data;
- ii. Quality and reliability of vendor proprietary data;
- iii. Monitoring and investigating data fluctuations including root cause assessments.

FTSE Russell adheres to the Principles of the LSEG Data Governance Program which are aimed at the following:

- To ensure appropriate use of, and adequate security for, Group Data and information;
- To cultivate a workplace where staff are rewarded for good Data stewardship and responsible use of Group Data Assets;
- To facilitate informed and actionable decision-making;
- To enable an integrated view of Data across Group organisational boundaries;
- To promote the efficient use of resources to meet the Data and information needs of the Group community;
- To support transparency and accountability for internal and external stakeholders by ensuring appropriate access to and authorised use of relevant information.

FTSE Russell uses a combination of automated and manual controls to ensure data quality to the best of its ability.

Appendix A

FTSE Carbon Reserves data model

1. The FTSE Carbon Reserves data model

The FTSE Global Carbon Reserves data model provides granular coverage of fossil fuel reserve ownership among publicly listed companies in developed markets and emerging economies. High levels of reserves and associated future emissions indicate potential 'stranded assets' on the balance sheets of fossil fuel companies, a key component of climate transition risk.

The dataset includes not only company-level data of oil, gas, and coal reserves, but also projections of potential GHG emissions released, if these reserves are extracted and combusted. Fossil fuel potential emissions are calculated by applying standardised emissions factors to each reserve type to adjust for non-energy uses of reserves, to capture carbon emissions from combustion, and to calculate additional operation emissions, such as from leakage and flaring.

The primary goal is to capture companies that own a majority stake in fossil fuel reserves. Only those reserves in which the company owns at least a 50% stake are captured.

1.1 FTSE Carbon Reserves Dataset Construction

Information is collected from publicly available reports by FTSE Russell analysts. The collection methodology captures both Proved (1P) and Proved and Probable (2P) reserves, which reflect the probability of economic extraction. Revenues, production and sales figures, and reserves quantities are captured with no minimum threshold. The raw data can be utilised to create custom and flexible models to suit individual needs.

1.2 Collection method and delivery

The data is collected by an analyst who will typically manually extract (e.g. copy and paste) the wording from the data source and apply tags. This process usually takes roughly 5 hours for each company depending on the type of data that is being reviewed, and 1 year for the universe of companies on which data is being collected.

1.3 Quality measures

To ensure data quality new assessments are reviewed by senior analysts and automated checks are applied.

1.4 Quality measures occur in three stages

Stage 1 Analyst Level Quality Controls – an automated quality check using rules in the system that immediately can be used by the analyst on the data entry screen.

Stage 2 Advanced Quality Controls (conducted during research cycle) – more experienced quality control analyst carries out a further review which includes checking for accuracy of data assessed, and consistency in comparison with companies in the same subsector; this check can also include checks on previous stage 1 checks undertaken.

Stage 3 FTSE Quality Monitoring of research (conducted bi-annually during research cycle) – FTSE Russell Sustainability experts conduct quality monitoring checks on quantitative data consistency regarding units, green activity and or revenue gaps, outliers and peer comparisons.

1.5 FTSE Carbon Reserves and International Standards

The FTSE Carbon Reserves model does not make use of any international standards.

Appendix B

Carbon Emissions data models

The carbon emissions data used in FTSE sustainable indices comprise two related methodological components. Scope 1 and Scope 2 are based on the FTSE Russell carbon emissions methodology, while Scope 3 is based on the LSEG carbon emissions methodology. They are presented separately below for methodological transparency and provenance, but together form the carbon emissions dataset used in FTSE Sustainable Investment indices

1. The FTSE Scope 1&2 Carbon Emissions data model

1.1 FTSE Carbon Emissions Dataset Construction

The FTSE Carbon Emissions Dataset provides reported and estimated Scope 1 and Scope 2 emissions data for both the assets and activities controlled by global publicly listed companies and their entire value chain (upstream and downstream activities).

1.1.1 Coverage and Universe

The coverage for Scope 1 and Scope 2 extends from 2015 to the present day, with reported emissions data covering the majority of global market capitalisation as represented by the FTSE Global All Cap with estimated and extrapolated data filling in gaps in company disclosure.

1.2 FTSE Carbon Emissions Dataset Construction

Disclosed corporate carbon emissions data is collected from publicly available reports. Additional Scope 1 and Scope 2 carbon emissions data from CDP (Carbon Disclosure Project) are also used in the dataset construction.

1.2.1 Disclosed Corporate Carbon Emissions Data Quality Checks

Rigorous data quality checks are performed on the disclosed corporate carbon emissions data.

Materiality Checks – In order to reduce the impact of underreporting, minimum disclosures requirements are applied based on the disclosure of industry-specific material categories. If this materiality check is failed, the Scope 3 emissions disclosure is excluded and emissions will be estimated.

Extreme Value Checks – Checks are performed on disclosed data for Scope 1 and Scope 2. This mitigates extreme carbon intensities by replacing outliers with quantile thresholds of the carbon intensities distribution within respective peer group, replacing extreme data with more plausible values from the distribution.

FTSE Russell does not currently check if disclosed data has been independently verified in line with global or European standards due to the low levels of data currently reported in line with these standards.

1.3 FTSE Carbon Emissions Estimation Strategies

To fill in the gaps left by reported data, we have designed estimation strategies for Scope 1 and 2. A few models are common between all the scopes, while others are specific to individual emissions scopes (explained below). The emissions for all scopes are estimated using a hierarchical framework which estimates emissions if disclosed data is unavailable, defaulting to high-accuracy situational strategies before relying on general estimates.

1.4 General hierarchical data model

1.4.1 Estimation strategies common to all emissions scopes:

Extrapolation estimation

- Fills in missing data points where a company has reported carbon emissions in previous years. The strategy assumes that the carbon intensity of the latest year is equivalent to the most recently reported emissions intensity.

Sector Median estimation

- Assigns each company to a sector classification (ICB) and region. Takes the median carbon intensity of all companies reporting carbon emissions for each sector. Level of comparison is based on available corporate disclosures. If enough companies disclose, the estimation will default to a higher resolution peer group (e.g., Waste Management companies in North America).

Input/Output (IO) estimation

- Uses Environmentally Extended Input Output Models to determine the carbon intensity of business segments. Offers an economy-wide perspective accounting for production flows within and between sectors and countries, independent of disclosed emissions. Generates more nuanced estimates of carbon emissions for complex firms with multiple business lines.

1.4.2 Scope 1 and Scope 2 Specific Estimation Strategies

Inverse Distance Weight Interpolation (IDWI) estimation

- Estimates carbon intensity for each business segment based on company-level emissions disclosures. Carbon disclosures of pure play companies are more heavily weighted in the estimates, as their top-line carbon intensity more directly reflect the target business segment due to their concentrated exposure. Generates more nuanced estimates of carbon emissions for complex firms with multiple business lines.

Energy Production estimation

- Estimates carbon emissions based on reported power generation by fuel type (coal, gas, solar etc.). Specific to power utilities, company-disclosed annual production figures are multiplied against their respective emission factor.

1.4.3 Aggregation of Scope 1 and Scope 2 Carbon Estimates

Scope 1 and Scope 2 emissions estimates are calculated through the median of the Sector Median, Inverse Distance Weighted Interpolation, and Input/Output estimates, for any given financial year.

1.5 Collection method and delivery

Reported data utilized within the data model is either sourced from CDP or collected by an analyst who manually extracts data from the data source.

1.6 Quality measures

There are several layers of quality control throughout the data collection and calculation process to ensure data accuracy. These checks are in four stages:

Stage 1 Analyst Level Quality Controls – an automated quality check using rules in the system that immediately can be used by the analyst on the data entry screen;

Stage 2 Advanced Quality Controls (conducted during each research cycle) – there is a further review which includes checking for accuracy of data assessed, and consistency in comparison with companies in the same ICB subsector; this check can also include checks on previous stage 1 checks undertaken;

Stage 3 FTSE Quality Monitoring of research – there are quality monitoring checks on quantitative data consistency regarding units, revenue gaps, outliers, and peer comparisons.

1.7 FTSE Carbon Emissions and International Standards

FTSE Russell uses the GHG Protocol definition of Scope 1 and Scope 2 i.e.:

- Scope 1: Direct GHG emissions;
- Scope 2: Indirect GHG emissions associated with purchased electricity, heat, and cooling.

2. LSEG Scope 3 Carbon Emissions data model

2.1 Dataset Construction

The LSEG Scope 3 Carbon Emissions Dataset provides reported and estimated 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).

2.1.1 Coverage and Universe

The coverage for Scope 3 extends from 2015 to the present day, with reported emissions data covering the majority of global market capitalisation as represented by the FTSE Global All Cap with estimated and extrapolated data filling in gaps in company disclosure. However, due to the particularly poor Scope 3 disclosure rates of emissions from investments by companies in ICB Financials (ICB industry 30) there is a dedicated estimation methodology for their downstream emissions.

2.2 Data inputs

Disclosed corporate carbon emissions data is collected from publicly available reports by LSEG. Additional Scope 3 carbon emissions data from CDP (Carbon Disclosure Project) are also used in the dataset construction.

2.2.1 Disclosed Corporate Carbon Emissions Data Quality Checks

Rigorous data quality checks are performed on the disclosed corporate carbon emissions data.

Materiality Checks – In order to reduce the impact of underreporting, minimum disclosures requirements are applied based the disclosure of industry-specific material categories. If this materiality check is failed, the Scope 3 emissions disclosure is excluded and emissions will be estimated.

Extreme Value Checks – Checks are performed on disclosed data for Scope 3 upstream and Scope 3 downstream. This mitigates extreme carbon intensities by replacing outliers with quantile thresholds of the carbon intensities distribution within respective peer group, replacing extreme data with more plausible values from the distribution.

LSEG does not currently check if disclosed data has been independently verified in line with global or European standards due to the low levels of data currently reported in line with these standards.

2.3 Carbon Emissions Estimation Strategies

To fill in the gaps left by reported data, estimation strategies have been designed for Scope 3 emissions. The emissions are estimated using a hierarchical framework which estimates emissions if disclosed data is unavailable, defaulting to high-accuracy situational strategies before relying on general estimates.

2.4 General hierarchical data model

2.4.1 Estimation strategies common to all emissions scopes:

Extrapolation estimation

- Fills in missing data points where a company has reported carbon emissions in previous years. The strategy assumes that the carbon intensity of the latest year is equivalent to the most recently reported emissions intensity.
- The strategy is employed on Scope 3 upstream and downstream.

Sector Median estimation

- Assigns each company to a sector classification (ICB) and region. Takes the median carbon intensity of all companies reporting carbon emissions for each sector. Level of comparison is based on available corporate disclosures. If enough companies disclose, the estimation will default to a higher resolution peer group (e.g., Waste Management companies in North America).
- The strategy is employed on Scope 3 upstream and downstream.

Input/Output (IO) estimation

- Uses Environmentally Extended Input Output Models to determine the carbon intensity of business segments. Offers an economy-wide perspective accounting for production flows within and between sectors and countries, independent of disclosed emissions. Generates more nuanced estimates of carbon emissions for complex firms with multiple business lines.
- The strategy is employed on upstream Scope 3.

2.4.2 Scope 3 Specific Estimation Strategies

Regression estimation

- Calculates carbon intensity based on linear regression prediction against sector and regional peers.
- This model is applied separately on upstream and downstream Scope 3.

Fossil Fuel Production estimation

- Estimates downstream carbon emissions utilising reported fossil fuel production data. Company-disclosed annual production figures are multiplied against their respective emission factor.
- The strategy is employed on downstream Scope 3 emissions.

Specialised estimation for financial institutions

- Calculates emissions by multiplying notional investments exposures on a firm's balance sheet (i.e., net loans and equity) by emissions factors (i.e., investment intensity) specific to each financial instrument.
- The strategy is employed on downstream Scope 3 emissions and is specific to financial institutions.

Median estimation for financial institutions

- Calculates a median investment intensity resulting from the Specialized estimation for financial institutions for given sector peer groups. Median investment intensity is multiplied by company EVIC to obtain the final estimate.
- The strategy is employed on downstream Scope 3 emissions and is specific to financial institutions for which the Specialized approach is not available.

2.4.3 Aggregation of Scope 3 Carbon Estimation Strategies

Upstream and downstream Scope 3 emissions are estimated separately. For upstream emissions, the final estimated value is calculated through a weighted average of the results from Input/Output, Regression, and Sector Median strategies. For downstream emissions, the final estimated value is based on the Fossil Fuel Production or financial-specific estimations, if available, or the weighted average of the results from the Regression and the Sector Median strategies.

2.5 Collection method and delivery

Reported data utilized within the data model is either sourced from CDP or collected by an analyst who manually extracts data from the data source.

2.6 Quality measures

There are several layers of quality control throughout the data collection and calculation process to ensure data accuracy. These checks are in four stages:

A. Stage 1 Analyst Level Quality Controls – an automated quality check using rules in the system that immediately can be used by the analyst on the data entry screen;

Stage 2 Advanced Quality Controls (conducted during each research cycle) – there is a further review which includes checking for accuracy of data assessed, and consistency in comparison with companies in the same ICB subsector; this check can also include checks on previous stage 1 checks undertaken;

Stage 3 FTSE Quality Monitoring of research – there are quality monitoring checks on quantitative data consistency regarding units, revenue gaps, outliers, and peer comparisons.

2.7 International Standards

LSEG uses the GHG Protocol definition of Scope 3, i.e.: Scope 3: Other indirect emissions related to the upstream and downstream value chain.

For Scope 3 emissions, the GHG Protocol establishes comprehensive global standardised frameworks for measuring greenhouse gas emissions. Scope 3 emissions are divided into 15 categories as follows:

Scope 3 emissions	Category
Upstream	– Purchased goods and services – Capital goods – Fuel and energy-related activities (not included in scope 1 or scope 2) – Upstream transportation and distribution – Waste generated in operations – Business travel – Employee commuting – Upstream leased assets
Downstream	– Downstream transportation and distribution – Processing of sold products – Use of sold products – End-of-life treatment of sold products – Downstream leased assets – Franchises – Investments

Appendix C

Sustainalytics Global Standards Screening methodology - summary

• Introduction

This summary provides an overview of Sustainalytics' Global Standards Screening (GSS) methodology. GSS assesses the impact that companies have on stakeholders and the extent to which companies cause, contribute or are linked to violations of international norms and standards.

Specifically, GSS provides Sustainalytics' opinion as to whether a company is violating, or is at risk of violating, a principle (or principles) of the United Nations Global Compact (UN Global Compact or UNGC).

• What GSS assesses

In Sustainalytics' Global Standards Screening (GSS), Sustainalytics' provide their opinion as to whether a company is violating, or is at risk of violating, one or more of the UN Global Compact principles (UNGC) and related international norms and standards, including the Organisation for Economic Co-operation and Development Guidelines for Multinational Enterprises (OECD MNE Guidelines) and the United Nations Guiding Principles on Business and Human Rights (UNGPs), as well as their underlying conventions and treaties. Please see below Table 1 for more detail.

Sustainalytics analyses publicly reported allegations of adverse impacts caused by businesses, considering a number of different dimensions, including impact, company responsibility and management. A holistic assessment, following Sustainalytics' own guidelines, is made to determine Sustainalytics' view on company compliance with relevant international norms, assigning one of the following three assessments: Non-Compliant, Watchlist or Compliant.

The terms Watchlist and Non-Compliant should be understood to be Sustainalytics' opinion and a normative assessment of a company with regard to the UNGC principles. Sustainalytics' assessments are not intended to affect, pre-empt or substitute for other regulatory or legal procedures or proceedings in any jurisdiction.

Table 1: International Standards covered in GSS

United Nations Global Compact (UN Global Compact)	Identifies the specific UNGC principle(s) to which an issue relates.
United Nations Guiding Principles on Business and Human Rights (UNGPs)	References relevant principle(s) of the UNGPs associated with the Watchlist and Non-Compliant issue.
OECD Guidelines for Multinational Enterprises on Responsible Business Conduct (OECD MNE Guidelines)	References relevant chapter(s) of the OECD MNE Guidelines associated with the Watchlist and Non-Compliant issue.
Related International Conventions	References relevant international instruments and conventions associated with the Watchlist and Non-Compliant issue.

- **Assessment levels**

GSS assesses companies as Non-Compliant, Watchlist or Compliant in relation to the Principles of the UNGC. This Overall Global Compact Compliance Assessment reflects Sustainalytics' judgment call as to whether a company is violating, or is at risk of violating, a principle (or principles) of the UNGC or related international norms and standards.

Non-Compliant

A company is assessed by Sustainalytics as Non-Compliant when it is determined to be causing or contributing to severe or systemic and/or systematic violations of international norms. In other words, a company is assessed as Non-Compliant when it does not act in accordance with the principles and their associated standards, conventions and treaties, according to Sustainalytics' framework.

Companies assessed as Non-Compliant include those that are directly associated with issues causing severe, irreversible impacts that affect stakeholders and/or the environment and interfere with the enjoyment of rights and/or impose a clear cost on society. Companies displaying inadequate responses to address or remediate the issues at hand, including attempts to conceal their wrongdoing and/or involvement, are also assessed as Non-Compliant.

In addition, GSS assesses companies that facilitate third parties in human rights violations as Non-Compliant (with Principle 2 of the UNGC). For example:

- B. Companies involved in key and dedicated components of anti-personnel mines, cluster munitions, and chemical and biological weapons.
- C. Producers of nuclear weapons that support their proliferation outside of the five designated nuclear states or that violate UN sanctions / International Atomic Energy Agency (IAEA) rules.

Watchlist

A company is assessed by Sustainalytics as Watchlist if it is determined to be at risk of contributing to severe or systemic and/or systematic violations of international norms and standards.

A company is assessed as Watchlist when it is determined to be:

- Causing or contributing to severe negative impacts (harm) to stakeholders and/or the environment, but for which not all requirements for a Non-Compliant assessment could be established (e.g. company accountability cannot be confirmed);
- Accountable for negative impacts, but there is insufficient information to determine that the company is violating international norms;
- Linked to a violation of international norms, but the negative impacts are not severe enough to warrant a Non-Compliant assessment, or the negative impacts are still remediable;
- Improving its policies and programmes to prevent a reoccurrence, having been assessed previously as Non-Compliant, and further monitoring is required due to pending resolutions or remediation efforts.

Compliant

A company is assessed by Sustainalytics as Compliant when it has not been determined to be causing/contributing – or to be at risk of causing/contributing – to severe or systemic and/or systematic violations of international norms and standards in scope.

When there are allegations against a company that is assessed as Compliant, this means that the issues have been deemed by Sustainalytics not to meet the GSS assessment criteria for impact to be relevant for Watchlist or Non-Compliant assessment, or do not otherwise meet the requirements of GSS's methodology for Watchlist or Non-Compliant assessment.

A Compliant assessment in GSS should not be interpreted as implying that a company is in full compliance with all international norms.

- **GSS assessment dimensions**

When determining the GSS assessment, Sustainalytics analyses a company on several dimensions in relation to the issue, including:

- iv. Impact – severity of impact on stakeholders and/or environment – scale, scope and irremediability.
- v. Company Responsibility – accountability, exceptionality, and systemic and/or systematic nature of impact.
- vi. Company Management – response, management systems and implementation.

Table 2: Assessment Dimensions - Impact

Scale	
1.0	Gravity and duration of the impact for stakeholders / environment.
2.0	Extent of impact and infringement on norms (fundamental rights).
3.0	Whether stakeholders/environment are impacted negatively by a company's action(s) or omission(s).
Scope	
• Number of individuals affected Salience, the rights that stand out as being most at risk of the potential or actual impact identified. • (Geographic) reach of impact (contained or spreading, current or future). • Frequency of impact. • Consequences of (initial) impact, i.e. wider socio-economic impacts..	
Irremediability	
• Level of difficulty of restoring the situation and the rights of those impacted by the company. • Extent of damage to society and whether this impact can be rectified (e.g. through compensation, reinstatement).	

Table 3: Assessment dimension - Company responsibility

Accountability / managerial responsibility	
1. The nature of the issue and how closely the company's management is linked to the impact. 2. Whether the company caused, contributed to or is directly linked to the negative impact through its operations, products or services. 3. The relationship between the company and those responsible for or accused of relevant violations.	
Exceptionality	
• Assessment of whether conduct vis-à-vis international norms is extremely negative in comparison with other companies in the sector. • Whether the impact/issue stands out relative to what is acceptable in the industry (standards).	
Level of negligence (when applicable)	
• Whether a company could have reasonably known about the issue before it happened, and whether it has taken steps to mitigate the possible impact.	
Level of recurrence / pattern (when applicable)	
• Whether similar impacts (i.e. high number of injuries among workers due to faulty equipment) occurred. • Pattern of similar impacts involving the company (i.e. community displacements, loss of biodiversity in multiple situations).	
Duration	
• For Duration, we assess how long the issue existed and/or how long a company's management should have been aware of the issue.	

Systematic / systemic

- **Systematic:** A systematic issue refers to an accumulation of identical situations that derive from the same underlying problem (e.g. repeated pattern of accidents due to operating without adequate health and safety measures). To qualify as systematic, the violations must be substantial in scope, numerous in quantity, include the infringement of different types of rights or abuses take place in many places within the company's sphere of influence. Often, this is a result of an accumulation of violations and not merely isolated issues. They constitute a pattern of behaviour.
- **Systemic:** A systemic issue arises when a company does not address the adverse impacts that it causes or contributes to when operating in contexts where issues are prevalent due to governance failures. Examples are poor access to schools and high rates of poverty, which can increase the risk of child labour, or extensive bribery and corruption. If a company is operating in close proximity to many violations of norms but is ineffective in preventing or mitigating actual adverse impacts, it may be causing or contributing to systemic violations of norms.

Table 4: Assessment dimension - Company management

Company response

- Steps that the company has taken to address those affected (e.g. regarding remedy and/or compensation of possible victims).
- Commitments made regarding the concerns raised (e.g. involvement in local community development projects).
- The company's overall response to the allegations or impact and its overall transparency.

Management systems

- Whether the company has policies in place and conducts, impact and risk analysis, or other due diligence efforts.
- How the company implements and monitors adherence to relevant policies.
- Whether the company has implemented best practices according to international and industry standards.

Implementation

- Overall implementation of commitments to prevent a recurrence.
- Reporting on steps taken to prevent similar impacts in the future.
- Verification and monitoring of measures taken (ideally confirmed by third parties).

• Upgrade criteria

The assessment of a company can be upgraded based on improvements in its management of an issue. Upgrades are based on changes in a variety of factors related to risk of recurrence, with upgrade criteria determined at the time of initial GSS assessment and monitored quarterly. Generally, the following are considered by Sustainalytics as signs of a decreased risk of recurrence:

1. Progress toward remediating the negative impacts caused
2. Policies and processes aimed at preventing a recurrence (publicly disclosed)
3. Lack of new negative developments regarding the issue

GSS identifies two conditions (criteria) for upgrading a company with an issue from Non- Compliant to Watchlist or Compliant:

1. The violation has ceased. (This relates to the actual issue(s).)
2. The company has adopted a responsible course of action. (This relates to the company's response to the issue(s).)

Assessment changes from or to Non-Compliant and Watchlist are approved by the Sustainalytics Global Standards Oversight Committee (GSOC).

- **Sources and transparency**

GSS research and assessments are conducted based on publicly available information, which includes, but is not limited to, media and NGO sources, company reporting, publications by international organizations, regulatory filings and judicial information. The research team utilizes publicly available sources for a large part of its research. There are two broad categories of sources that are employed in the research process:

1. Company disclosures, such as annual reports, financial documents (e.g. 10-K or 8-K reports in the US), proxy statements, and sustainability reports, which are published in accordance with legal and regulatory requirements.
2. Media sources, such as news outlets, NGO reporting, legal documents, regulatory decisions, government websites, and open data platforms, as well as other publicly available sources.

GSS reports list all the sources used for the assessment. For all Non-Compliant assessments, GSS reports additionally identify the key sources used in the section called Basis for Non-Compliance Assessment.

Sources are assessed using Sustainalytics sources protocol, which focuses on understanding their political bias (if any) and the accuracy of their reporting. Sustainalytics is a non-partisan research, data and ratings organization. When compiling data using primary sources or using news and other editorial content from secondary sources, Sustainalytics are dedicated to taking an unbiased approach and presenting only the facts within Sustainalytics research. Sustainalytics are apolitical and do not support or oppose any government, party, company, individual or issue. Sustainalytics look for specific sets of information related to impact, company response, company accountability, reputational impact and exceptionality. The information extracted from these sources does not alone determine any research outcome. The information is applied to static research methodologies and analyst guidance documents to ensure consistent research outcomes. In all cases Sustainalytics review multiple sources.

Sustainalytics contacts companies before GSS publishes a Watchlist or Non-Compliant assessment in order to confirm the allegations and request additional information regarding the issue under assessment. GSS reports indicate whether and when Sustainalytics contacted a company, whether and when Sustainalytics received a response, as well as the nature of the response. Although Sustainalytics do not solicit feedback on GSS company reports, Sustainalytics provide companies with the full GSS report upon request and take into consideration any company feedback. Further dialogue is conducted as part of Sustainalytics' Global Standards Engagement (GSE) service.

- **Eligibility rules**

Sustainalytics implements rules regarding the eligibility of securities, with the aim of providing valid assessments in accordance with the GSS framework for corporate entities. Exceptions are made based on a qualitative assessment of an issuer using factors such as whether an entity is an issuer of financial instruments.

Several types of entities are generally not eligible for a Sustainalytics GSS assessment. Examples are listed closed- and open-ended mutual funds, foundations/endowments, associations, syndicated loan issuers or ABS and structured product issuers. Furthermore, central banks or multilateral organisations are not eligible as these are governmental institutions.

Entities that were eligible initially can become ineligible for a GSS assessment if the company is declared bankrupt or acquired by another company.

- **Rules on Corporate Ownership and relationships in GSS**

The GSS product evaluates the entire corporate tree of eligible issuers for each company assessed as Watchlist or Non-Compliant. GSS's approach to parent/subsidiary responsibility is a qualitative approach, based on Sustainalytics rules, and derives from requirements in international standards such as the OECD MNE Guidelines.

GSS's method to corporate ownership departs from assessing ownership in terms of shareholding (voting rights). The research thresholds for assigning a GSS assessment can be summarized as follows:

Entities linked to a GSS issue originating at a subsidiary (relationship with leverage):

3. GSS holds a parent company accountable for the negative impacts of its subsidiary if:
 - » The parent has a more than a 50% (majority-ownership) shareholding in that subsidiary OR
 - » The parent company has a minority ownership shareholding (20-50%) in the subsidiary AND
 - » exerts operational control over it (the parent company has the ability to prevent and/or mitigate negative impacts on stakeholders). This is evidenced by the presence of the parent company on the Board of Directors or among senior management of the subsidiary, the parent company having voting control over the subsidiary and/or evidence of cross shareholding, among other factors.
4. If there is strong evidence that a parent company does not have operational control over a minority-owned subsidiary (i.e. the parent company does not have the ability to use its leverage to prevent and/or mitigate negative impacts on stakeholders), an exception can be made and a specific entity might not be assigned the same GSS assessment. These exceptions do not apply to subsidiaries (majority) owned by companies involved in controversial weapons.

Entities linked to a GSS issue originating at a parent (business relationship through ownership):

- a. GSS assigns the same assessment to subsidiaries if the subsidiary is majority-owned by its parent (more than 50%).
- b. If there is strong evidence that a subsidiary is not directly involved in the misconduct of its parent company, an exception can be made. These exceptions concern entities that are not linked to the issue, operate autonomously from the parent or do not support the parent company through financial relationships or operate a different business model. Factors used to make an exception are company disclosure, governance and business model. These exceptions do not apply to subsidiaries owned by companies involved in controversial weapons.
- c. GSS does not hold a company responsible for the GSS issue originating at a sibling entity unless there is a connection to the issue and management overlap between the siblings.

• Delivery cycle and channels

GSS assessments are published on a quarterly basis in Sustainalytics' client systems (on the last Friday of November (for Q1), February (for Q2), May (for Q3) and August (for Q4)).

In exceptional situations, GSS may provide assessment changes in between quarterly deliverables. This would be in response to a major incident or company admission of misconduct.

Table 5: Overview of International norms and standards in GSS Scope

Norms areas	UN Global Compact Principles	OECD Guidelines for Multinational Enterprises Chapters	UN Guiding Principles on Business and Human Rights
Human Rights	P1 – Businesses should support and respect the protection of internationally proclaimed human rights P2 – Businesses should make sure that they are not complicit in human rights abuses	Chapter IV – Human Rights Chapter VIII – Consumer Interests	11 – Respect for Human Rights 12 – Respect internationally recognized Human Rights 13 – Avoid / Prevent Human Rights impacts 14 – Enterprise context and structure adverse impacts 15 – Policy Commitment 16 – Policy Statement 17 – Human Rights Due Diligence 18 – Identify and assess actual / potential impacts 19 – Integration and appropriate action 20 – Verification of adverse impacts with stakeholders

Norms areas	UN Global Compact Principles	OECD Guidelines for Multinational Enterprises Chapters	UN Guiding Principles on Business and Human Rights
			21 – Communicate on human rights impact 22 – Provide remediation
Labour Rights	P3 – Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining P4 – Businesses should uphold the elimination of all forms of forced and compulsory labour P5 – Businesses should uphold the effective abolition of child labour P6 – Businesses should uphold the elimination of discrimination in respect of employment and occupation	Chapter V – Employment and Industrial Relations	11 – Respect for Human Rights 12 – Respect internationally recognized Human Rights 13 – Avoid / Prevent Human Rights impacts 14 – Enterprise context and structure adverse impacts 15 – Policy Commitment 16 – Policy Statement 17 – Human Rights Due Diligence 18 – Identify and assess actual / potential impacts 19 – Integration and appropriate action 20 – Verification of adverse impacts with stakeholders 21 – Communicate on human rights impact 22 – Provide remediation
Environment	P7 – Businesses should support a precautionary approach to environmental challenges P8 – Businesses should undertake initiatives to promote greater environmental responsibility P9 – Businesses should encourage the development and diffusion of environmentally friendly technologies	Chapter VI – Environment Chapter IX – Science and Technology	Not Applied to issues captured under Principles 7, 8 and 9.
Business Ethics	P10 – Businesses should work against corruption in all its forms, including extortion and bribery	Chapter VII – Combating Bribery, Bribe Solicitation and Extortion Chapter X – Competition Chapter XI – Taxation	Not Applied to issues captured under Principle 10.

Appendix D

Sustainalytics Controversy Ratings methodology – summary

- **Introduction**

Sustainalytics assesses companies' involvement in incidents with negative environmental, social and governance (ESG) implications. The Controversy Ratings reflect Sustainalytics' opinion on a company's level of involvement in issues and how it manages these issues.

- **What the Controversy Ratings assesses**

The first building block is an Incident Score, which represents a singular negative issue where the company has been involved. Incidents on the same topic are collected and combined to inform an Event Score on that topic. Finally, controversies are a collection of multiple events that have the same theme and represent the final building block of the rating.

Incidents

An Incident serves as the foundational building block in calculating a Controversy Rating. Defined as any company activity that yields adverse effects on stakeholders and/or the environment, an incident may introduce varying levels of risk to the company itself. Incidents are evaluated based on two primary factors: (1) the negative environmental and/or social impacts resulting from the activity, and (2) the reputational risk it poses to the company. The incidents can arise from a singular event (e.g., a mining explosion) or ongoing activity (e.g., the use of child labour in manufacturing).

An Incident is assessed on two assessment criteria: sustainability impact and reputational risk, with each scored on a scale of 1 to 10. A lower score represents incidents that are assessed to have the lowest impact and/or pose the lowest risk to the company.

The impact of the incidents are scored by Sustainalytics analysts based on the following considerations:

- **Severity:** Assessed according to the depth, breadth, and duration of the incident. Depth measures the nature of the incident (low, medium, high) in environmental, social and governance terms. Breadth measures how broad/ widespread the impact of the incident is in environmental, social and governance terms. The duration of an incident measures the period during which the impact of the incident was/is felt by stakeholders, as well as the period it takes to absorb or reverse it.
- **Accountability:** Refers to the specific entities (parent companies, subsidiaries, joint ventures, suppliers) that are accountable for the incident, the level of involvement (direct or indirect) and the level of impact (based on company ownership).
- **Exceptionality:** The degree (low, medium, high) to which the incident corresponds with industry patterns of corporate behaviour.

The reputational risks of the incidents are scored based on the following considerations:

- **Notoriety:** The degree to which an incident has been covered by media. Sustainalytics' assessment framework takes into account parameters such as the frequency of published news items covering the incident, the reach and relevance of the reporting media sources and the tone of the news item(s).
- **Exposure:** The extent to which companies are exposed to further ESG-related risks through company involvement in a controversy and the extent of reputational damage attached to a company's business ethics violations, where applicable.

Incidents typically inform the Controversy Rating for a period of three years. In exceptional cases, long-running high-impact incidents continue to inform the Controversy Rating for more than three years until it no longer poses a risk to the company.

Events

Events are a collection of one or more Incidents that provide a signal about the severity of a company's involvement in misconduct that is reported in the media. Incident scores form the base of the Event Rating and provide an indication of the severity of the impact of an issuer's misconduct on the environment and/or society, as well as the reputational risk generated by the misconduct. Sector analysts can override the signals coming from the Incident scores through an additional layer of analysis at the Event level, which means that Incident scores are not the final determinant of Event Ratings. In contrast to Incident scores, Event scores include consideration of company preparedness, company response and the trend for similar incidents.

To assess an Event, an analyst looks at the series of underlying Incidents from a holistic perspective and assesses based on the following factors:

- **Impact:** Negative impact that the incidents have caused to the environment and society;
- **Risk:** Business risk to the company as a result of the incidents;
- **Management:** A company's management systems and response to incidents

Each event is assigned an Event Category according to a 5-level scale, with 5 representing the most significant event:

- **Category 5 (Severe):** The Event has either has a severe impact on the environment and/or society or poses serious business risks to the company. This category typically represents exceptional egregious corporate behaviour, high frequency of recurrence of incidents, very poor management of ESG risks, and a demonstrated lack of willingness by the company to address such risks.
- **Category 4 (High):** The Event has a high impact on the environment and/or society, posing high business risks to the company. This rating level represents systemic and/or structural problems within the company, weak management systems and company response, and a recurrence of incidents.
- **Category 3 (Significant):** The Event has a significant impact on the environment and/or society, posing significant business risks to the company. This rating level represents evidence of structural problems in the company due to recurrence of incidents and inadequate implementation of management systems or the lack of management systems.
- **Category 2 (Moderate):** The Event has a moderate impact on the environment and society, posing moderate business risks to the company. This rating level represents low frequency of recurrence of incidents and adequate or strong management systems and/or company response that mitigate further risks.
- **Category 1 (Low):** The Event has a low impact on the environment and/or society, and risks to the company are minimal or negligible

Controversies

Controversies are a collection of Events, in a similar way that Events are a collection of Incidents. Controversy Scores are determined by the highest Event score (most severe Event) automatically becoming the Controversy

Score for that Controversy Type. Accordingly, the scores fall between Category 1 and Category 5. Unlike Events, there is no ability for an analyst to intervene and adjust the Controversy Score – it is based on a strict formula and there is no ability to override it.

- **Update Frequency**

Events are updated by the assigned analyst on an ongoing basis as new information becomes available. New incidents with high impact or risk scores or new corporate developments may lead to either an upgrade or a downgrade at any point during the year. A full review of a company's Event scores is carried out by analysts at least every 12 months. Any change to an Event score may also be reflected in the Controversy score, if that Event was the highest scoring Event in that Controversy category.

- **Oversight**

Sustainalytics' oversight of controversy ratings is conducted at two levels:

- Events Oversight Committee (EOC): A four-member committee that reviews significant category changes before they are implemented. Significant category changes refer to either a downgrade from any category level to Category 4 or 5, or an upgrade from Category 4 or 5
- Alerts Team: All Category changes are reviewed by the Alerts Team, which coordinates the delivery of the bi-weekly alerts.

Appendix E

LSEG D&I scores- summary

LSEG D&I scores

LSEG Diversity and Inclusion (D&I) scores are designed to measure the relative performance of companies based on factors related to diverse and inclusive workplaces. This is based on whether companies are tracking, reporting and achieving on measures of diversity, inclusion and people development, collectively and over time.

Data sources used: LSEG/Refinitiv ESG data and TRBC.

LSEG ESG data

The scores use LSEG ESG data which is gathered from publicly available information sources and is manually collected to ensure information is standardized, comparable and reliable. The ESG data collected is quality controlled and verified in a rigorous process by experienced analysts and robust automated checks.

The public availability of ESG information varies across different countries, industries and market capitalizations. The ESG database is therefore more reflective of companies with a greater degree of ESG data disclosure. These includes companies listed in countries where regulator or investor demand favours such disclosure, companies in industries with a tradition of ESG transparency and companies with mid to large market capitalizations.

Business Classifications

LSEG D&I scores use The Refinitiv Business Classification (TRBC) as the benchmark for some of the metrics and to calculate weights by industry group. TRBC is an industry classification system that is owned and operated by LSEG. The market-oriented system tracks the primary business of a corporation and reflects global industry practices by grouping together correlated companies that offer products and services into similar end markets.

Calculation methodology

Introduction

LSEG D&I scores are calculated on a quarterly basis after close of business on the final business day of each calendar quarter (determined using the New York Stock Exchange trading calendar) and use the most recent weekly data update from the ESG database. The new rebalance is effective at market open on the first business day of the new calendar quarter.

The D&I score is calculated as follows:

- 24 measures that are relevant to diversity and inclusion are selected from more than 500 measures available in LSEG's ESG database (see the measures in the table below).
- Each of these 24 measures is allocated to one of four pillars: diversity, inclusion, people development and controversies. The measures are dynamically weighted according to their availability within an industry or country.
- Values for three of the four pillars are then calculated using a weighted average of their constituent measures.
- A value for the controversies pillar is calculated as a simple average of its constituent measures.
- The overall D&I score for each company is the simple average of the four pillar scores (each must be greater than zero for the company to be assigned an overall D&I score).

Company selection and classification

The company selection procedure starts by taking the universe of companies covered by the ESG database. For each company, data for 24 measures is taken from the ESG database. For each company, the measures used cover the latest Fiscal Year (FY) available.

From the ESG data, individual companies are identified using a unique company identifier. For each individual company, static data (organization name, region, country, ISIN, fiscal year, TRBC industry) and the 24 measures are identified for the latest FY. This process results in a data set or data dictionary for each company.

Once a data dictionary has been compiled for each company, free float market capitalizations are determined and companies are classified according to their capitalization. Classifications are determined on a country basis, in which the top 70% of companies (by cumulative market capitalization value) are considered large cap and the companies in the 70% to 88% region of cumulative market cap are considered mid cap. All others keep the default small cap classification. Capitalization classification could potentially be done by region, but it is proposed that a country-based classification is optimal.

The default configuration for the index rebalancing engine is to exclude inactive companies from the calculation steps below

Determining min/max values for measures

To scale the scores of individual measures, it is necessary, for each measure, to calculate a minimum/maximum value for each measure in each of the TRBC industry groups. The complete set of companies under consideration is iterated through and the data dictionary for each is examined to update the data dictionary entries.

Determining measure weights by industry group/country

Many individual measures are weighted based on the availability of that measure across companies in that industry group (TRBC Level 3) or country. To determine those weights, it is necessary to first:

- (1) Perform a count for each measure, by both industry group and country. For Boolean measures, only Yes ('Y') values are counted. Values that are missing, empty (null), or NA are not counted.
- (2) Convert the raw counts to percentages, when there are more than 10 companies available. If there are 10 or fewer in the industry group or country, the percentage is set to zero and a pillar score is not calculated.
- (3) Use the availability percentages to identify boundaries for assigning quartiles (i.e. for a given measure and industry group or country, determine into which quartile that percentage falls).

Once the steps above are complete, the quartile assignments can be used to determine the weighting (25%, 50%, 75% or 100%) for that measure within its industry group or country. In the final step, each company is tagged if it belongs to either an industry or a country for which there are insufficient members to form a benchmark.

Calculating Diversity/Inclusion/People Development pillar ratings

The diversity, inclusion and people development pillars all use the same methodology to calculate the pillar ratings. The steps are:

1. Determine the measures involved in the pillar's calculation (see the table below)
2. For each company:
 - a. For each measure used in the pillar:
 - i. Determine the measure weight (based on whether the measure is weighted relative to industry group or to country)
 - ii. Add the measure weight to the pillar weight total
 - iii. If the measure is present:
 1. Convert non-numeric values to the appropriate numeric value (i.e. Booleans are mapped to 0/1, strings are mapped as determined by a data file).
 2. If numeric value is not a number (e.g. value was NA) or a Boolean 'N' (No) value, increase transparency count.
 3. Obtain the appropriate min/max value for the measure within the industry group.
 4. Calculate the raw score as: $(\text{numericValue} - \text{minValue}) / (\text{maxValue} - \text{minValue})$.

b. Use the raw scores for each measure to create the normalized scores for each measure. Each normalized measure score is computed as: $\text{rawScore} * (\text{MeasureWeight} / \text{sumOfWeights})$.

The sum of the normalized scores, rounded to an integer value, forms the overall score for the company for that pillar.

Calculating controversies scores

The methodology for calculating the controversies score is based on the company's market cap classification, and for each measure, whether any controversies were reported (the measures contain the number of controversies, but this is not taken into account). The methodology steps are:

1. Determine the measures involved in the pillar's calculation (see the column 'Pillar' in the Measure Names declarative file, described in the appendix below).
2. For each company:
 - a. For each measure used in the pillar:
 - i. If measure is not present for the company or is NA, score 100 for the measure (no controversies is considered a positive).
 - ii. If the measure is present and is a positive number, score based on market capitalization (large = 50; mid = 25; small = 0).
 - b. The score for the controversies pillar is the average score for the individual measures, rounded to an integer value.

Controversies pillar is the only pillar in which the measures are updated every two weeks, rather than on a fiscal year basis.

Final rating assembly

Overall rating is based on a simple average of the four individual pillar scores. A company must have non-zero scores on all four pillars to have an overall rating computed. The decision was made to omit the assignment of overall scores to companies scoring zero on one or more pillars. The rationale behind the decision was that their inclusion would reduce the mean score, making the 'average' significantly lower. For the overall rankings, the intent was to rank only those companies that are actively tracking and reporting on all four pillars.

List of measures

Pillar	Item Code	Description	Benchmark Group
Controversies	TR.ControvDiversityOpportunity	Number of controversies published in the media linked to workforce diversity and opportunity (e.g. wages, promotion, discrimination and harassment).	Market Cap Classification
Controversies	TR.RecentControvDiversity	Number of controversies linked to workforce diversity and opportunity (e.g. wages, promotion, discrimination and harassment) published since the last fiscal year company update.	Market Cap Classification
Controversies	TR.ControvWorkingCondition	Number of controversies published in the media linked to the company's relations	Market Cap Classification

Pillar	Item Code	Description	Benchmark Group
		with employees or relating to wages or wage disputes.	
Controversies	TR.RecentControvWorkingCondition	Number of controversies linked to the company's relations with employees or relating to wages or wage disputes published since the last fiscal year company update.	Market Cap Classification
Diversity	TR.AnalyticBoardCulturalDiversity	Percentage of board members that have a cultural background different from the location of the corporate headquarters.	Country
Diversity	TR.PolicyDiversityOpportunity	Does the company have a policy to drive diversity and equal opportunity?	Industry
Diversity	TR.TargetsDiversityOpportunity	Has the company set targets or objectives to be achieved on diversity and equal opportunity?	Industry
Diversity	TR.WomenEmployees	Percentage of women employees.	Industry
Diversity	TR.NewWomenEmployees	Percentage of new women employees.	Industry
Diversity	TR.WomenManagers	Percentage of women managers.	Industry
Diversity	TR.AnalyticBoardFemale	Percentage of females on the board.	Country
Diversity	TR.AnalyticExecutiveMembersGenderDiversity	Percentage of female executive members.	Country
Inclusion	TR.USLGBTEqualityIndex	The score of the company in the HRC corporate equality index from the Human Rights Campaign Foundation.	Country
Inclusion	TR.FlexibleWorkingHours	Does the company claim to provide flexible working hours or working hours that promote a work-life balance?	Industry
Inclusion	TR.DayCareServices	Does the company claim to provide day care services for its employees?	Country
Inclusion	TR.EmployeesWithDisabilities	Percentage of employees with disabilities or special needs.	Country

Pillar	Item Code	Description	Benchmark Group
Inclusion	TR.HIVAIDSProgram	Does the company report on policies or programs on HIV/AIDS for the workplace or beyond?	Country
People Development	TR.PolicySkillsTraining	Does the company have a policy to improve the skills training of its employees?	Industry
People Development	TR.PolicyCareerDevelopment	Does the company have a policy to improve the career development paths of its employees?	Industry
People Development	TR.AvgTrainingHours	Average hours of training per year per employee.	Industry
People Development	TR.InternalPromotion	Does the company claim to favor promotion from within?	Industry
People Development	TR.MgtTraining	Does the company claim to provide regular staff and business management training for its managers?	Industry
People Development	TR.AnalyticTrainingCosts	Training costs per employee in U.S. dollars	Industry
People Development	TR.EmployeeSatisfaction	The percentage of employee satisfaction as reported by the company.	Industry

Appendix F

Further information

A glossary of terms used in FTSE Russell's Ground Rule documents can be found using the following links:

[Glossary.pdf](#)

[Glossary - ESG](#)

For contact details please visit the FTSE Russell website or contact FTSE Russell client services at info@ftserussell.com.

Website: <https://www.lseg.com/en/ftse-russell/industry-classification-benchmark-icb>

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