

LSEG Sustainability Ratings and Data

ESG Scores and
ESG Scores Plus
scoring methodology

v1.0

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Model change log

LSEG ESG Scores Model Change Log

Publish Date	Methodology Document Version Number	LSEG ESG Model Version Number	Description of Key Changes from Previous Version
08/03/2026	1.0	1.0	Initial version of the document

LSEG ESG Scores Plus Model Change Log

Publish Date	Methodology Document Version Number	LSEG ESG Plus Model Version Number	Description of Key Changes from Previous Version
08/03/2026	1.0	1.0	Initial version of the document

Executive summary

Built on more than 25 years in Environmental, Social and Governance (ESG) assessment of companies (“corporates”), LSEG Sustainability Ratings and Data simplifies a complex and evolving landscape of ESG corporate reporting, regulatory requirements and investor needs. It is designed to enable practical insights that support capital allocation decisions, benchmarking and engagement. Our flagship ESG data solution comprises standardised sustainability data, ESG materiality assessments to capture real-world risk exposure, and trusted ESG scores that aggregate insights into clear, actionable sustainability signals.

Focused on enhanced transparency, objectivity, flexibility and assessment rigour, the ESG Scores aim to capture corporate’s management quality of the most relevant ESG themes and the overall sustainability footprint of companies through the enriched risk and impact assessment.

The LSEG ESG Scores have been developed through deep research¹², client consultation and alignment with key sustainability frameworks. Through this, LSEG has developed a comprehensive and adaptive dataset to scoring companies on ESG factors.

Recognizing that ESG assessments are evolving, the scoring methodology ensures that scores reflect real-time dynamics of a company’s internal and external operations, and is built on two main pillars that form the LSEG ESG Scores: ESG Scores and ESG Scores Plus.

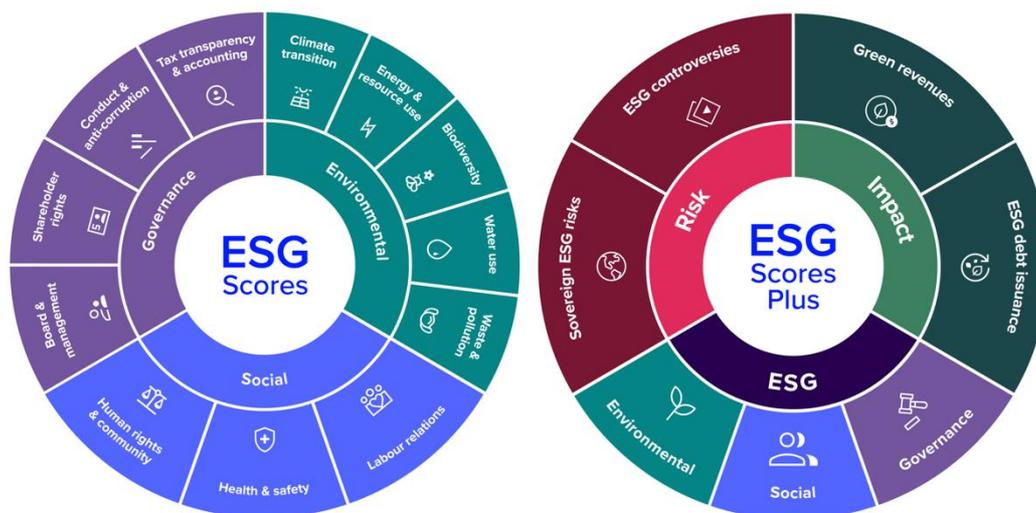


Figure 1 The components of the LSEG ESG Scores, and how the LSEG ESG Scores combine with other Sustainable Investment Models and data components to form the LSEG ESG Scores Plus

¹ [LSEG ESG Journal Winter 2023 - Financial, Double, or Dynamic? Theories of ESG Materiality and Practitioner Approaches](#)

² [LSEG ESG Journal Fall 2024 - Made to Measure: Indicator Construction and Measurement Scales in ESG Score Design](#)

The LSEG ESG Scores

The LSEG ESG Scores assess the policies, systems and processes by which a company manages material ESG risks within its operations and its supply chain. The focus of the Scores is to provide an absolute assessment of how corporates approach operational risk management, aligned with key global disclosure frameworks and regulations, with clear cross-sections as to where relevant comparisons can be made.

The Scores utilize a structured set of 220 key indicators– including emissions, energy performance, human rights, and shareholder dynamics – to calculate **twelve** Theme Scores. For each Theme, companies are assessed on disclosure and performance indicators, whilst key metrics act as checks to help mitigate greenwashing risks. These Theme Scores are then grouped into **three** ESG pillars: Environmental, Social and Governance, and a single overall Score per company.

The assessment is based on publicly available data obtained from corporate information such as Annual reports or Integrated Reporting, Corporate Sustainability Reports, press releases, corporate websites and CDP (Carbon Disclosure Project) data to construct backward and forward-looking indicators. It is designed to provide analysis in two dimensions:

- **Risk exposure** - the extent to which a company can have an impact on, or be exposed to, an ESG issue.
- **Management quality** - the strength of the company's policies, systems and processes to manage these impacts or exposures.

The LSEG ESG Scores Plus

The LSEG ESG Scores Plus model is based on the LSEG ESG Scores to which complementary information is added that provides additional insight on different views of ESG performance. The Plus scores add two dimensions: a risk-related view and an impact-related view. This bi-dimensional view contains four key pillars. The **risk-related** dimension of the scores includes companies' **exposure to sovereign risk** and **news controversies**. The **impact-related** dimension captures companies' ability to either generate **green revenues** or issue **green bonds**. The overarching aim of the Plus model is to provide a comprehensive 360° view picture of the overall sustainability footprint and business model of a company.

The modelling framework builds on recent market communicated needs to have convergence on ratings and scores (Berg et al., 2022³) and have been built on previous modeling approaches to provide a more comprehensive view of both the internal operations of companies, as well as companies' external ESG-related activities.

Key Highlights of the LSEG ESG Models

Building on LSEG's longstanding expertise in ESG assessment, the following are key element improvements to form the Scores:

Score	Element	Description
LSEG ESG Score	Comprehensive assessment	Assesses key elements of ESG strategy (e.g. policies, targets, risk assessments, governance mechanisms and quantitative disclosure)
	Enhanced materiality approach	Simple and flexible materiality approach that clearly delineates cross-sections for legitimate comparisons and can be reformatted to investor preference
	Transparency	A robust scoring mechanism that is designed to be easy to understand, attribute and engage on
	Focus on quantitative metrics	Incorporates greater numbers of quantitative metrics using both absolute and relative thresholds
	Minimum requirements	Key metrics are nominated to prevent high scores unless critical elements of Theme strategy are met
LSEG ESG Score Plus	Improved controversies model encapsulating perception risk on ESG performance	Enhanced controversy measurement, using only UNGC/OECD violation-related categories

³ [Aggregate Confusion: The Divergence of ESG Ratings* | Review of Finance | Oxford Academic](#)

Score	Element	Description
	Sovereign related ESG risk exposure	Provides insight into country level ESG risks materially relevant to companies' operations.
	Impact dimension capturing green activities	Capturing green revenues and green issuance relate, looking for ESG improvers and high performers in terms of exposure to the green economy.
	Independent pillars assessing external ESG dimensions	The content set scores - Controversies, Green Issuance, Green Revenues and Sovereign ESG Risk - can be used as datasets in their own right adding specific value for different use-cases
	A 360°-view on ESG measures	Complete version of the Plus Score that considers all the content sets and provides a comprehensive view of the ESG Score

Table 1 Key Elements of LSEG ESG Score and LSEG Score Plus

LSEG ESG Scores

The LSEG ESG Model assesses the policies, systems and processes by which a company manages Environmental, Social and Governance risks within its operations and its supply chain. It is designed to provide analysis in two dimensions – the relative impact on or exposure to an ESG topic that a sector can have; and the strength of a company’s policies, systems and processes to manage these impacts or exposure.

Collected datapoints are transformed into over 220 indicators grouped into 12 themes and 3 pillar scores which then aggregate into the overall ESG score for the company.

Figure 2 provides an overview of the ESG Scores and their structure, which is described in detail in the following sections.



Figure 2 Top down view of the LSEG ESG scores

1 Methodology Overview

Four high-level steps for ESG Scoring

This section aims to provide a high-level overview of the ESG scoring process, breaking it down into four main steps. Further detail is available in the linked sections and later in the document. There are four high-level steps for ESG scoring, starting from Theme scoring, assessing materiality levels, aggregating into Pillar scores and then finally into the ESG scores, as per [Figure 3 Four main steps to ESG Scoring](#) below.

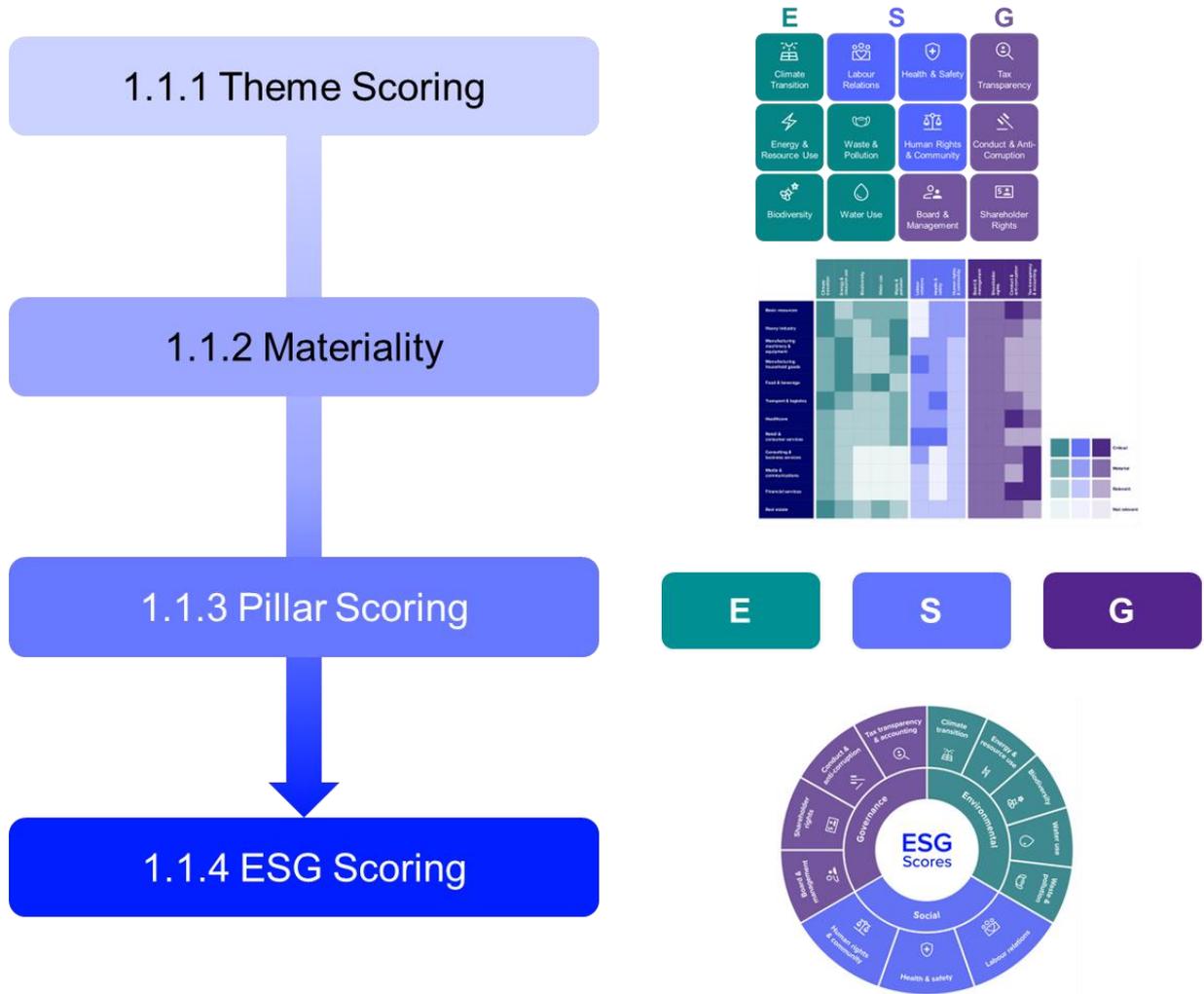


Figure 3 Four main steps to ESG Scoring

1.1.1 Theme Scoring

Theme Scoring is divided into five phases, shown in the below figure:

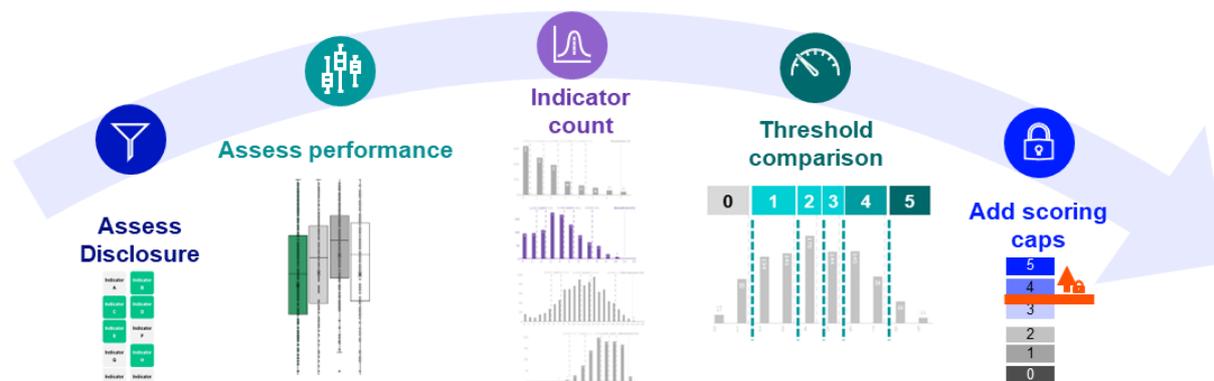


Figure 4 Phases of Theme Scoring

The Climate Theme is an exception to this process as it leverages the TPI MQ Score with an adjustment for carbon emissions performance.

Assess Disclosure

Companies are assessed against data measures as part of the ESG dataset collection process⁴, supported by robust, tightly defined guidance to minimise subjectivity.

For a disclosure assessment, data measures are transformed into indicators by a system of rules which determine whether the indicator has been met (a 1 vs. a 0). The availability of data for one or more data measures results in a positive indicator response (such as the presence of a particular policy or publishing a certain quantitative metric).

Assess Performance

Companies are also assessed on performance metrics – where their disclosed value is compared against a reference value to determine if they score 1 or 0. This can take two forms:

- Absolute scoring assessment – where a metric is compared against a static benchmark value to determine a positive response (e.g. a company needs at least 50% independent directors or 0 fatalities). More details can be found in [2.1.2](#).
- Relative scoring assessment – where a metric is compared against thresholds, generated from peer values, to determine a positive response. (e.g. companies in the lowest quartile for fresh water use over revenue are rewarded). More details can be found in [2.1.3](#).

N.B.: Companies that do not publish data against the metric will receive a score of 0 for that metric.

Indicator count, threshold comparison and scoring caps

Indicator assessments within each Theme are summed and compared against a reference table that contains the points required for each Theme Score on a 0 to 5 scale. Where a score of 5 evidences best practice in ESG issue management, and a 0 score represents lacking core features of ESG issue management.

A capping logic is then applied whereby a company cannot score more than a 3 in a Theme unless it has met key gateway metrics. For example, a company is capped at 3 in the Shareholder Rights Theme if it has unequal voting rights.

A generalised schematic of the Theme Scoring process is shown on the following page. For further detail on Theme descriptions and scoring see [2.2](#).

⁴ See 4.1 “Data collection and inputs for the ESG Score”

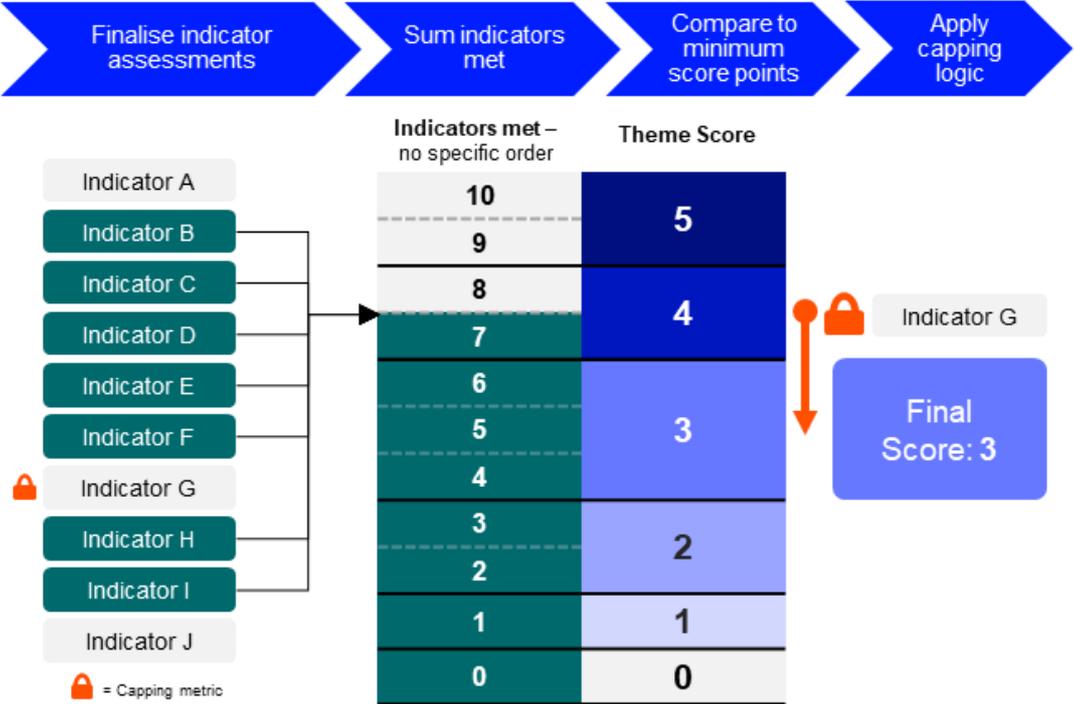


Figure 5 Turning indicator assessments into Theme Scores

1.1.2 Materiality

A materiality matrix determines the relative weight of Themes for a company. There are 12 categories called 'Materiality Groups' which are formed of TRBC⁵ Industry Groups with similar operational footprints.

The materiality assessment uses (i) TRBCs assigned at the overall company level and (ii) those at the revenue segment level (where this represents more than 10% of overall revenue). This ensures that the ESG assessment takes into account not only a company's main line of business, but also any additional significant sources of revenue that may lie outside of it and require different materiality considerations.

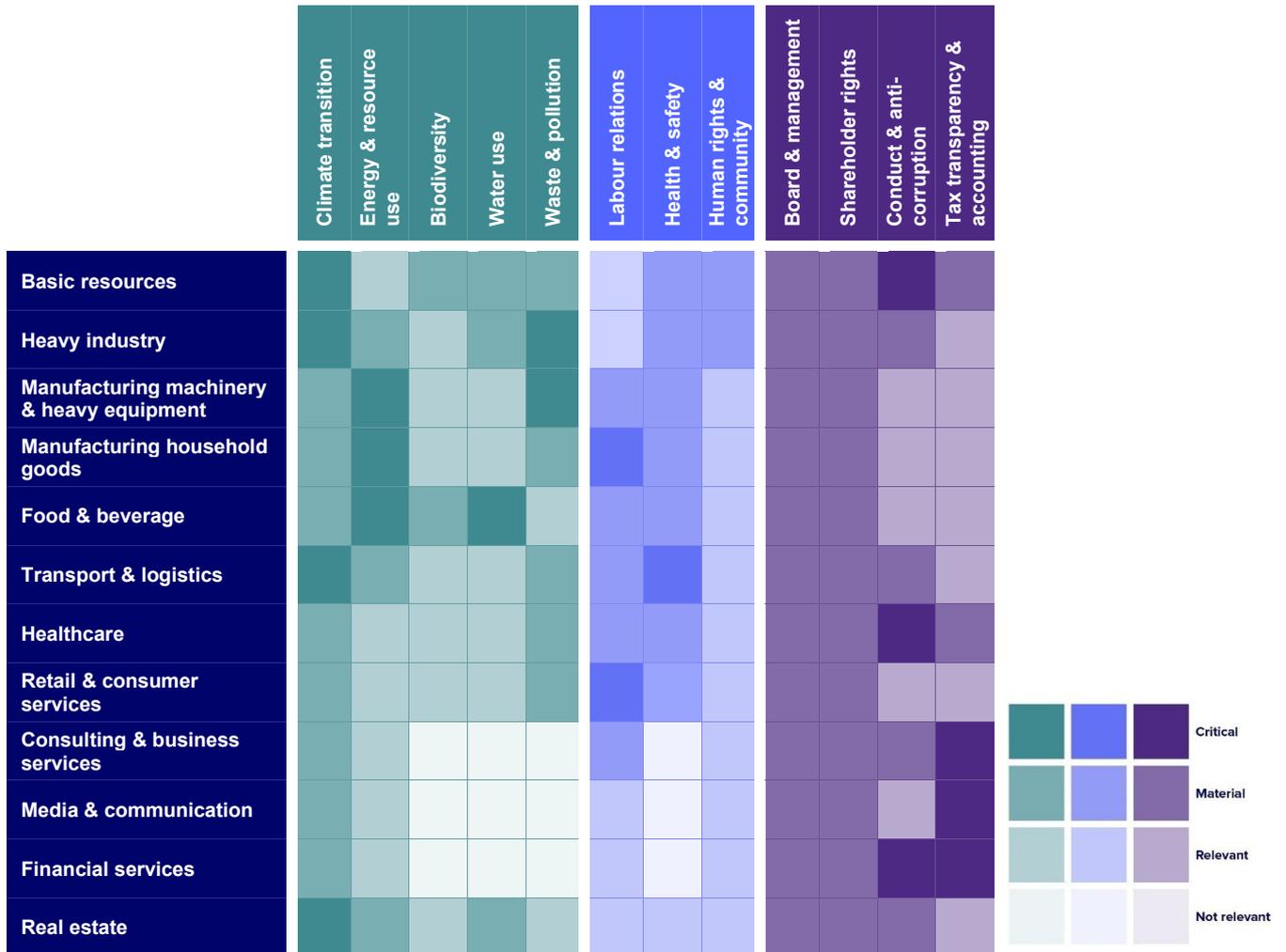


Table 2 shows how Materiality Groups map to the Themes and different materiality levels (Note footnote for Not Relevant⁶). Further detail in 2.3. An Accessible version of this table can be found in [Appendix 1: Materiality Matrix Accessible Version](#).

1.1.3 Pillar Scoring

Pillar Scores are calculated as a weighted sum of constituent Theme Scores, multiplied by Theme Weights. Theme Weights (W_{Theme}) are calculated as shown in Figure 6, and explained in detail in 2.4. For the Pillar score a 5.0 demonstrates best practice in managing all material themes within the ESG Pillar. A 0.0 suggests all material ESG themes within the pillar lack core components of management.

⁵ The Reference data Business Classification (TRBC) is the most comprehensive, detailed, and up-to-date **sector and industry classification** available, covering over 2.7 million entities in 130 countries to 5 levels of granularity. It is used notably for benchmarking, peer comparison and navigation, and building custom sector and thematic indices.

⁶ Some Themes are not directly relevant to some activities, even though some impacts (e.g. waste) can result indirectly. ⁷ Data measures are the raw values collected by analysts which capture elements of corporate reporting e.g. does the company have a policy on a topic, does it publish a certain quantitative metric, or does it describe its strategy on a topic.

Where the materiality assessment has identified multiple Materiality Groups for the same company, the highest Materiality Level for that Theme will be used. For example, within Health and Safety, if a company whose primary business line was in Consulting and Business Services ('Not Relevant' for H&S) also had more than 10% revenue from Transport and Logistics ('Critical'), the Theme would be assessed as critical.

For further detail see [2.4](#).

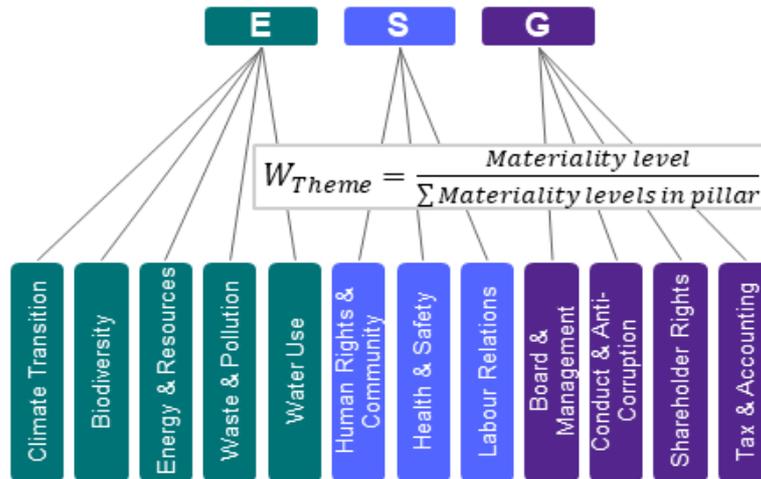


Figure 6 Theme Weight for Pillar Score calculation overview

1.1.4 Overall ESG Scoring

The Overall ESG Score is calculated as a weighted sum of Pillar Scores. It is a 0 to 5 absolute score.

The weighting of each Pillar is dependent on how much of the potential Pillar Levels are used – for example in the E Pillar the sum of Materiality Levels is divided by 5 (5 Themes each with a max Level of 1). The three Pillar Weights are normalised so they sum to 1.

The ESG Score is then calculated as the sum of the three Pillar Weights ($W_{Pillar\ i}$) multiplied by Pillar Scores. For further detail see [2.4](#).

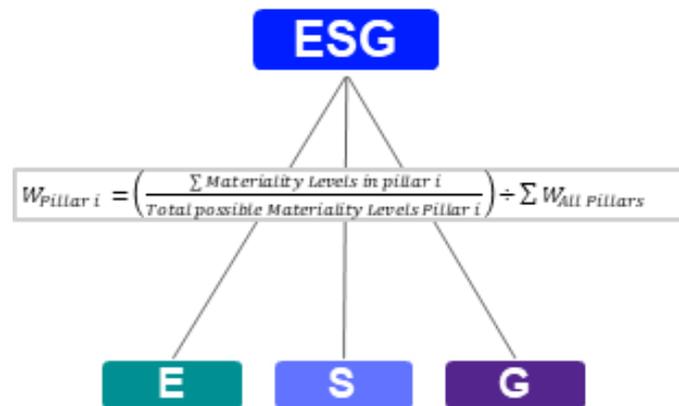


Figure 7 Pillar Weight for ESG Score calculation overview

2 ESG Score Methodology Detail

2.1 Indicator assessment

The indicator assessment step turns raw ESG data measure⁷ values into binary indicator scores. There are three distinct indicator scoring methods described in this section:

⁷ Data measures are the raw values collected by analysts which capture elements of corporate reporting e.g. does the company have a policy on a topic, does it publish a certain quantitative metric, or does it describe its strategy on a topic.

- Disclosure-based scoring
- Absolute performance scoring
- Relative performance scoring.

The Climate Theme is an exception to this logic, where the TPI MQ Score and its staircase approach to indicator assessment is leveraged; this is covered in detail in sub-section [3.1](#).

2.1.1 Disclosure-based scoring

Input metrics for disclosure-based assessment can be divided into those with positive or negative polarity:

- Most input metrics are positive polarity: e.g. If the company has a policy or provides data it is generally considered a positive aspect and a point is given.
- A small number of metrics have negative polarity: e.g. the existence of a golden share or limitations on the removal or directors are generally seen as negative characteristics for governance. In this case, companies are rewarded for not having these features.

Datatype	Polarity	Scoring condition
Boolean	Positive	Score 1 if metric met. Score 0 if metric not met or no data disclosed.
	Negative	Score 0 if metric met. Score 1 if metric not met.
A numeric value, monetary value or date.	Positive	Score 1 if value provided. Score 0 if no value provided.

Table 3 Summary of indicator disclosure-based scoring

2.1.2 Absolute performance scoring

Absolute performance indicators have specific, static scoring thresholds based on external benchmarks and generally recognised standards. For these indicators, companies will first be assessed in line with the disclosure-based scoring as above, and then an additional 'absolute performance' indicator is created within the dataset, derived from the raw values of an existing indicator⁸, should a company meet the requirements for absolute performance assessment.

Theme	Performance indicator	Scoring Rule
Board & Management	Majority Independent Board Members	> 50%
	Board Gender Diversity ≥40%	≥40%
	Compensation Committee Independent	100%
Health & Safety	Zero Employee Fatalities for 2Y	0 for 2 most recent Fiscal Years (FY)
	HSMS Certified Percentage	100%
Labour Relations	Gender Pay Gap ≤5%	≥95%
Conduct & Anti-corruption	Zero Corruption Fines for 2Y	0 for 2 most recent FYs
Shareholder Rights	AGM Notice ≥28 Days	≥28 days
	Annual Board Member Re-election	1 (signifies annual re-election)
Waste & Pollution	Zero Environmental Fines for 2Y	0 for 2 most recent FYs
	100% EMS ⁹ Certification	100%
Tax Transparency & Accounting	Audit Committee Independent	100%

Table 4 Performance indicators and scoring rules for absolute-performance assessment

2.1.3 Relative performance approach

Relative performance metrics are scored based on reported values relative to other companies – these measurements are designed to reward leading performance against a metric¹⁰.

⁸ For example, a company will first receive a point for being transparent around the HSMS certification of its business. It will then receive an additional point if its HSMS certification applies across the company, i.e. is 100%.

⁹ Environmental Management System

¹⁰ The Carbon Emissions metric with the Climate Change Theme is an exception; rewarding good performance and penalising weaker performance at the Theme Score level, rather than the indicator score level.

All companies for the same financial year of assessments are compared against the same set of thresholds. The thresholds used for a particular Financial Year are calculated once to provide stability and avoid repeated recalculations as new data flows in. Given the delay between financial year ends and data being available for all companies, assessments for FY0 are compared against the thresholds formed of FY2 data. For those companies that still have an indicative score for a particular fiscal year, if FY2 quartiles haven't been calculated yet, data from FY3 will be used.

Comparison thresholds are calculated at the materiality group¹¹ and global level, where the latter is used if fewer than 10 companies report useable data for a materiality group. The dataset to calculate the comparison thresholds is formed of companies that have a specific minimum market capitalization that aligns with the minimum thresholds for mid cap companies in the FTSE All World Index¹². This is designed to reduce biases in the comparison thresholds from new companies being added to the wider ESG universe. The market capitalization thresholds used are shown in the below table, where data is taken as of the last trading day within the calendar year:

Fiscal year	Minimum market capitalization threshold
2024	\$317,100,000 USD
2023	\$300,400,000 USD
2022	\$270,060,000 USD
2021	\$689,010,000 USD
2022	\$604,970,000 USD
2021	\$563,630,000 USD

Table 5 Minimum Market capitalization thresholds for Relative performance scoring

The relative performance indicators in [Table 6](#) below are calculated with companies in the group rewarded receiving 1 point and all others receiving 0 points, including companies not providing data. To further reduce fluctuations in scores due to small movements in data, a buffer rule is applied such that companies in the group rewarded in FY1 will still be rewarded in FY0 if they remain within 10 percentage points of the threshold. For example, if in year 1 a company is lower than the 25th percentile for Energy Use to Revenues, it will still be rewarded in year 2 if it discloses data and remains below the 35th percentile.

Theme	Relative performance Indicator	Group Rewarded
Climate Change	Carbon Emissions Intensity – Highest	Top Quartile (penalised)
	Carbon Emission Intensity – Lowest	Lower Quartile
Energy & Resource Use	Energy Use Performance	Lower Quartile
	Renewable Energy Ratio Performance	Top Quartile
Health & Safety	Total Injury Rate Performance	Lower Quartile
Tax Transparency & Accounting	Non-Audit to Audit Fees Performance	Lower Quartile
Waste & Pollution	NOx Emissions Performance	Lower Quartile
	SOx Emissions Performance	Lower Quartile
	Waste Recycled Ratio Performance	Top Quartile
Water Use	Fresh Water Withdrawal Performance	Lower Quartile

Table 6 Relative performance indicators and associated reward groups.

¹¹ For further definition and information around the construction of materiality groups, see [1.1.2](#).

¹² See section 7.6 of the [FTSE Global Equity Index Series Ground Rules](#)

2.2 Theme scores

2.2.1 The 12 ESG Themes

The ESG Model consists of 12 Themes, scored on a 0 to 5 integer scale. All Theme Scores are calculated for all companies but with variable weights (see [1.1.2](#)).

Pillar	Theme Name	Description
Environmental	 Climate Transition	Formed of the Transition Pathway Initiative's Management Quality Score (TPI MQ) and an additional carbon intensity adjustment. TPI MQ scores are based on a qualitative assessment of how companies manage climate risks and implement their transition plans to gauge management's willingness to decarbonise and the company's focus on addressing material climate risks to its business model.
	 Energy & Resource Use	Assesses how a company approaches key manufacturing inputs – energy and resource management – and its policies, systems and processes to use these efficiently.
	 Biodiversity	Focuses on the policies, systems and processes by which a company manages the impact its operations may have on biodiversity and natural ecosystems.
	 Water Use	Designed to assess how companies approach fresh water management, use and scarcity risk. It is focused on how companies approach management of water risk through policies and planning, as well as publishing metrics that will allow stakeholders to gain an understanding of water footprints and the dependency on water in areas of water stress.
	 Waste & Pollution	Assesses how a company approaches the byproducts of its production processes - waste and pollution management – including policies, measurement and targets.
Social	 Labour Relations	Assesses how companies approach management of human capital. It includes metrics aligned with the ILO Core Labour Standards and an assessment of how diversity, equity and inclusion considerations are managed at the employee level.
	 Health & Safety	Focuses on how the company oversees and monitors health and safety performance and the quantitative outcome of its efforts, by drawing on key globally recognised reporting standards. Companies cannot score above a 3 in this Theme if they have recent fatalities.
	 Human Rights & Community	Focuses on how a company manages the human rights of external stakeholders and local communities. The indicators are designed to align with the Corporate Human Rights Benchmark, complemented by additional indicators on embedding human rights training.
Governance	 Board & Management	Assesses companies' approaches to organising their Board and C-Suite. It focuses on key aspects of board structure including experience, independence, committees, management of conflicts, and setting executive compensation.

Pillar	Theme Name	Description
	 Shareholder Rights	Focuses on company policies towards outside, minority shareholder rights and whether they have the right to vote on key areas of corporate strategy in accordance with their level of ownership. This includes the regular right to vote on items such as director appointments and executive compensation, whilst a Score higher than 3 cannot be achieved unless the one-share-one-vote principle is adhered to.
	 Conduct & Anti-Corruption	Assesses how a company approaches the management of key business risks including Corruption, Cyber, and Competitive behaviour. It also analyses how the company approaches risk through its Code of Conduct and responds when incidents occur.
	 Tax Transparency & Accounting	Assesses companies' approaches to tax transparency and the payment of tax in jurisdictions in which they operate. It also looks at the role of the Audit Committee, and its independence, regarding transparency around tax affairs and the relationship with the external auditor of the financial statements. A company cannot Score more than a 3 in this Theme unless it commits to align tax payments with the location of revenue generation.

Table 7 Pillar and associated with theme codes, theme names and descriptions

Further detail on the Themes, their objective, construction and calculation is contained in [3](#).

2.2.2 Overview of stages in ESG Scoring

There are three stages in theme scoring: (1) Sum indicator scores, (2) Threshold comparison and (3) Score capping. [Figure 8](#) Turning indicator assessments into Theme Scores provides a high-level overview of this process.

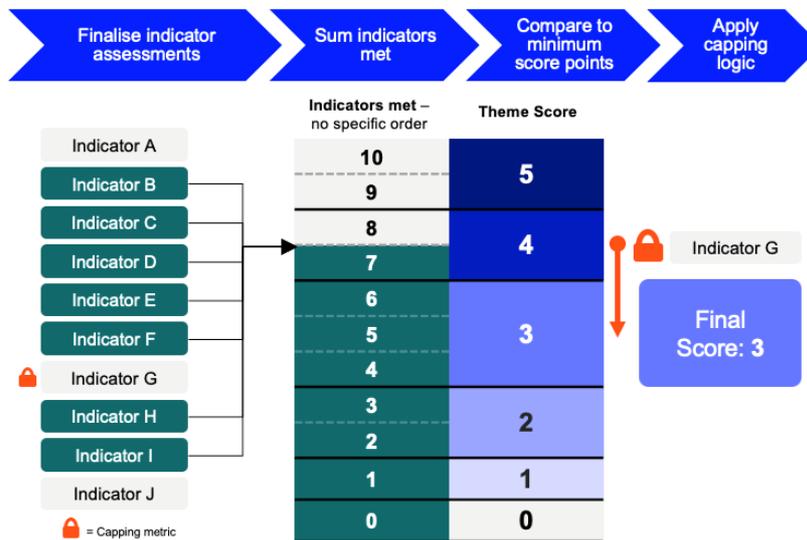


Figure 8 Turning indicator assessments into Theme Scores

2.2.3 Indicator sum

Once scores have been calculated for all indicators, these are summed at the theme level to produce total theme points. All indicators are weighted equally.

2.2.4 Threshold comparison

The indicator counts are compared to the threshold for each theme. A company must meet at least the number indicated in each Theme to reach that score (with a slightly different rule for Climate Transition¹³). For example, a company would achieve a score of 3 in the Board & Management Theme if it received 13 or 14 indicator points. See [Figure 9](#) for details.

ESG Themes	Scores						Total indicators
	0 Not engaging	1 Limited	2 Developing	3 Established	4 Advanced	5 Leading	
Climate Transition*	0	1	3	6	13	19	24
Energy & Resource Use	0	2	4	6	8	10	13
Biodiversity	0	1	2	3	4	6	7
Water Use	0	1	3	5	7	9	12
Waste & Pollution	0	3	6	9	11	15	20
Labour Relations	0	4	8	12	15	19	24
Health & Safety	0	2	4	6	8	11	13
Human Rights & Community	0	1	3	6	8	11	14
Board & Management	0	8	10	13	15	17	19
Shareholder Rights	0	7	9	10	11	13	14
Conduct & Anti-Corruption	0	4	7	10	13	15	18
Tax Transparency & accounting	0	2	4	6	8	10	14

Figure 9 Minimum number of indicators needed to meet a given score for each Theme. An accessible version of this table can be found in [Appendix 2: Minimum indicators required for each Theme Accessible version](#)

2.2.5 Score capping

For each theme¹⁴, one indicator is selected as a capped indicator to guard against greenwashing, “social washing”, etc. if a company does not meet that indicator, its score for that Theme will be capped at score 3 (out of 5) even if it received sufficient indicator points to potentially achieve a higher score. The capped metrics are shown in the following table:

Theme	Capping Metric
Biodiversity	Biodiversity targets
Board & Management	Chairperson Independent
Energy & Resource Use	Targets Energy Efficiency
Human Rights & Community	Impact Assessment Human Rights
Health & Safety	Zero Employee Fatalities for 2Y
Labour Relations	Trade Union Representation
Conduct & Anti-Corruption	Corruption Risk Assessment
Shareholders	Policy Equal Voting Right
Tax Transparency & Accounting	Taxes Align to Revenues
Waste & Pollution	Targets Waste or Targets Pollution
Water Use	Water Use Targets

Table 8 Capping indicators for each theme. Note: The Waste and Pollution theme has two indicators that act as upper cap indicators. Either can be met to avoid having a capped score.

¹³ The Climate Theme uses the TPI MQ staircase approach to scoring. In addition, we apply a carbon intensity overlay from score 3 upward. This is covered in [3.1](#).

¹⁴ The Climate Change Theme does not have a single score capping metric. The Climate Change Theme leverages the TPI MQ scoring methodology which adopts a staircase approach, whereby a company can only advance to a higher score once it has met all metrics at its current level. For more information, see the [3.1](#).

The overall Theme Score combines both the theme scoring thresholds and the caps to generate 0 to 5 integer scores. The output of all scoring procedures is combined and indexed at a company and fiscal year level such that each theme has: (i) an indicator count, (ii) an uncapped score and (iii) a capped score.

2.3 Materiality assessment

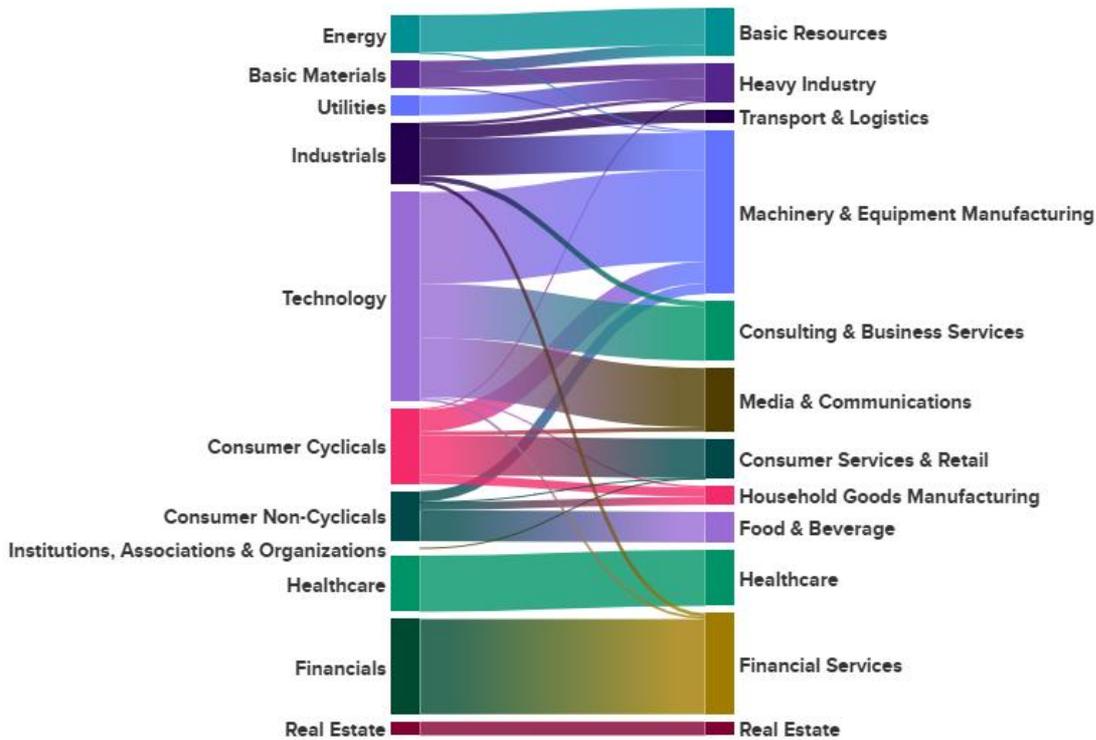
The materiality assessment determines the relative importance of the ESG Themes to a company and is focused on issues that may negatively affect the company or its stakeholders¹⁵.

Appendix 3: Materiality Group to TRBC provides detailed information on the transition from TRBC Economic Sector (LHS) to ESG Materiality Group (RHS).

2.3.1 Materiality groups

The materiality assessment is founded on the 12 materiality groups. Materiality groups are formed from a reorganised TRBC¹⁶ Classification system using the 153 Industry Groups. This transformation is necessary because industrial classification systems are generally market-orientated, grouping companies that serve similar markets together where they may have different ESG footprints. For example, note the Technology sector, where Software companies sit adjacent to Electronics Manufacturing.

TRBC Economic Sector to Materiality Group



FTSE All World Securities 23/12/2024
Volume measured by total market cap



Figure 10 The transition from TRBC Economic Sector (LHS) to ESG Materiality Group (RHS)

¹⁵ Positive materiality issues are considered in complementary models such as the [Green Revenues Data Model](#), allowing clients to more flexibly balance the relative contribution of positive and negative issues.

¹⁶ For more information as to the TRBC system and data collection for this dataset, please see [here](#).

Table 9 describes the Materiality Groups. A full mapping to TRBC Industry Group is contained in [Appendix 3: Materiality Group to TRBC](#).

Materiality Group	Materiality Group Descriptions
Basic Resources	Companies engaged in the extraction of raw materials from the ground. Sitting at the beginning of global supply chains - producing energy or raw materials. Generally located away from population centres.
Heavy Industry	Companies utilising raw materials provided by Basic Resources companies, transforming or refining these through industrial processes into inputs to manufacturing, including energy.
Machinery & Equipment Manufacturing	Companies transforming refined inputs into finished goods for use in retail or business applications.
Households Goods Manufacturing	Companies manufacturing goods for use in a household context (including cyclical e.g., homebuilding).
Transport & Logistics	Companies engaged in transport or warehousing of goods.
Food & Beverage	Companies within the food supply chain, including production and retail.
Healthcare	Companies that provide healthcare or manufacture specific products for healthcare purposes.
Retail & Consumer Services	Companies involved in retail or offering a tangible service.
Consulting & Business Services	Companies providing intellectual property (IP) or people-based services to corporates.
Media & Communications	Companies providing media, educational or digital services.
Financial Services	Companies offering banking, diversified financial services or insurance.
Real Estate	Companies where the primary business line involves owning and renting land or property.

Table 9 Materiality group descriptions

2.3.2 Assigning materiality groups to companies

Materiality groups are assigned to companies based on their TRBC classification. TRBCs are classified at both the company level and the revenue segment level.

The classification at the revenue segment level is used to pick up relevant ESG exposures for diversified companies. The materiality assessment will consider the primary ranked TRBC for each revenue segment that represents over 10% of total revenues. Where the combination of the company level and revenue segment TRBCs results in multiple materiality groups assigned, the assessment will use the highest exposure materiality group for each theme. Let's use Walt Disney as an example;

For FY22 Walt Disney received a company-level TRBC of Broadcasting which maps to the Media & Communications Materiality Group. The company has 3 reportable segments, all of which represent more than 10% of total firm revenue. The Experiences segment, which is mapped to the Amusement Parks and Zoos TRBC leads to the materiality assessment also using the Retail & Consumer Services Materiality Group, alongside the Media & Communications group assigned at the company level. The other two reportable segments also map to Media & Communications so have no impact on the materiality assessment.

Assignment	Reported Segment	Percentage of Total Revenue	Primary Mapped TRBC	Materiality Group
Company Level	NA		Broadcasting	Media & Communications
	Experiences	34%	Amusement Parks and Zoos	Retail & Consumer Services
Segment level	Entertainment	48%	Movie, TV Production & Distribution	Media & Communications
	Sports	21%	Online Services	Media & Communications

Table 10 Example of Walt Disney RBC allocation. Percentage revenues are rounded and do not include intercompany eliminations.

2.3.3 Materiality matrix

The materiality matrix determines the relative contribution of a Theme Score to a company’s Pillar and Overall Scores. The materiality matrix has four levels which determine the relative contribution of a company’s Theme Score to their Pillar and Overall Scores: The following materiality matrix shows how the materiality levels map between Themes and Materiality Groups:

	Climate transition	Energy & resource use	Biodiversity	Water use	Waste & pollution	Labour relations	Health & safety	Human rights & community	Board & management	Shareholder rights	Conduct & anti-corruption	Tax transparency & accounting
Basic resources	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant
Heavy industry	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant
Manufacturing machinery & heavy equipment	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant
Manufacturing household goods	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant
Food & beverage	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant
Transport & logistics	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant
Healthcare	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant
Retail & consumer services	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant
Consulting & business services	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant
Media & communication	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant
Financial services	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant
Real estate	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant	Relevant

Critical	Material	Relevant	Not relevant
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Critical

Material

Relevant

Not relevant

Table 11 Materiality matrix summary, an accessible version can be found in [Appendix 1: Materiality Matrix Accessible Version](#)

2.3.4 Determining Theme Weights

Themes are weighted in accordance with the weights shown in 2.2.3. Where a company’s segment reporting matches it to several Materiality Groups, the highest weight of these will be used for each Theme.

2.4 Pillar ESG score

There are three ESG Pillars: Environment (E), Social (S) and Governance (G). The weight of a Theme within a Pillar is calculated as:

$$Weight_{Theme} = \frac{Materiality\ Level_{Theme}}{\sum Materiality\ Levels\ in\ Pillar} \tag{1}$$

Step	Climate Transition	Energy & Resource Use	Waste & Pollution	Water Use	Biodiversity
Materiality Level	1	0.75	0	0.75	0.25
Theme Weight Calculation	$\frac{1}{1 + 0.75 + 0 + 0.75 + 0.25}$	$\frac{0.75}{2.75}$	$\frac{0}{2.75}$	$\frac{0.75}{2.75}$	$\frac{0.25}{2.75}$
Theme Weight within E Pillar	0.36	0.27	0	0.27	0.09

Table 12 Example of Theme weight calculation for the Environmental Pillar

Pillar scores are calculated by a weighted average using theme exposure, as per the below:

- Each theme has the potential to contribute a similar amount to pillar risk (so if an E theme is switched off, that reduces overall weight of E pillar)
- If all themes were critical, E risk = S risk = G risk
- For each TRBC, the materiality matrix is used to derive weights. An example below shows that for TRBC "Media & Professional services", the material themes are (1) for the Env pillar: T and ER with 0.5 each, (2) for the Social pillar: LR and SH with 1 and RM and TA with 0.5.

The Pillar Score is calculated as:

$$Pillar\ Score = \sum Weight_{Theme} \times Score_{Theme} \quad (2)$$

An example of Pillar scoring for the environmental pillar can be seen below.

ESG Theme	Theme Score	Materiality Level	Materiality Weight	Calc	Theme weight in pillar	Calc.	Weighted Theme Score	Calc.	Pillar Score
Biodiversity	0	Relevant	0.25	Materiality weight over sum of pillar materiality weights	0.09	Theme Weight in pillar times Theme Score	0	Sum Weighted Theme Scores	2.27
Climate Transition	1	Critical	1.00		0.36		0.36		
Energy and Resource	2	Material	0.75		0.27		0.54		
Waste and Pollution	4	Not relevant	0		0.0		0		
Water Use	5	Material	0.75		0.27		1.36		

Table 13 Example Pillar Score Calculation for Environmental Pillar Score

2.5 Overall ESG Score

The final LSEG ESG score represents the weighted average of pillar scores and normalized pillar weights. It is an absolute score on a 0 to 5 scale, quoted to 1 decimal place.

The weight of a Pillar within the Overall Score is proportional to applied Theme Weights over possible Theme weights. For example, in the Environmental Pillar there are 5 Themes, each of which can have a maximum weight of 1. The Environmental Pillar weight is therefore the sum of Environmental Theme weights over 5, as shown:

$$Weight_{Pillar} = \frac{\sum Materiality Level_{Theme}}{\sum Maximum Possible Materiality Level_{Theme}} \quad (3)$$

Pillar	Pillar Score	Sum of Pillar Weights	Possible Pillar Weight	Pillar Score set calculation	Raw Pillar Weight	Pillar weight calculation	Pillar Weight	ESG Score Calculation	ESG Score
E	2.27	2.75	5	Raw Pillar weight calculated by summing pillar weights over possible pillar weights	0.55	Raw Pillar weights are normalised to sum to 100	0.31	Pillar Weights multiplied by Pillar Scores	1.42
S	0.86	1.75	3		0.58		0.33		
G	1.2	2.5	4		0.63		0.36		

Table 14 Example of overall score calculation

The Overall ESG Score is calculated as:

$$ESG Score = \sum Weight_{Pillar} \times Score_{Pillar} \quad (4)$$

3 Theme Assessment

The ESG Model consists of 12 Themes and every company has a Score calculated for every Theme.

The following sections provide the objective of each theme, their calculation methodology, and details of performance, capping and other constituent metrics.

Pillar	Theme Name	Page
Environment	 Climate Transition	24
	 Energy & Resource Use	26
	 Biodiversity	29
	 Water Use	31
	 Waste & Pollution	33
Social	 Labour Relations	37
	 Health & Safety	40
	 Human Rights & Community	43
Governance	 Board & Management	46
	 Shareholder Rights	49
	 Conduct & Anti-Corruption	51
	 Tax Transparency & Accounting	54

Table 15 Page indication for themes description

3.1 Climate Transition

Overview

The Theme is formed of the Transition Pathway Initiative's Management Quality Score (TPI MQ¹⁷) with an additional carbon intensity adjustment.

TPI MQ scores are based on a qualitative assessment of how companies manage climate risks and implement their transition plans. The scores were developed by the Grantham Research Institute on Climate Change and the Environment at the London School of Economics and Political Science (LSE) together with FTSE Russell in 2017, based on the TCFD¹⁸ recommendations. By focusing on climate commitments and risk management measures, the TPI MQ scores gauge management's willingness to decarbonise and the company's focus on addressing material climate risks to its business model.

The Carbon Intensity adjustment is applied to companies with TPI MQ Scores between 3 and 5. Companies' Scope 1 and 2 carbon intensities are compared to those in the same Materiality Group. Companies with a TPI MQ Score of 3 or 4 and lower carbon intensities are given a one point boost to form their Climate Transition Score. Companies with a TPI MQ Score of 4 or 5 and high carbon intensities are given a one point penalty to form their Climate Transition Score. For the Carbon Intensity Score Adjustment the bottom quartile are rewarded, and the top quartile penalised.

The following figure illustrates the high-level construction of the Climate Transition Score:

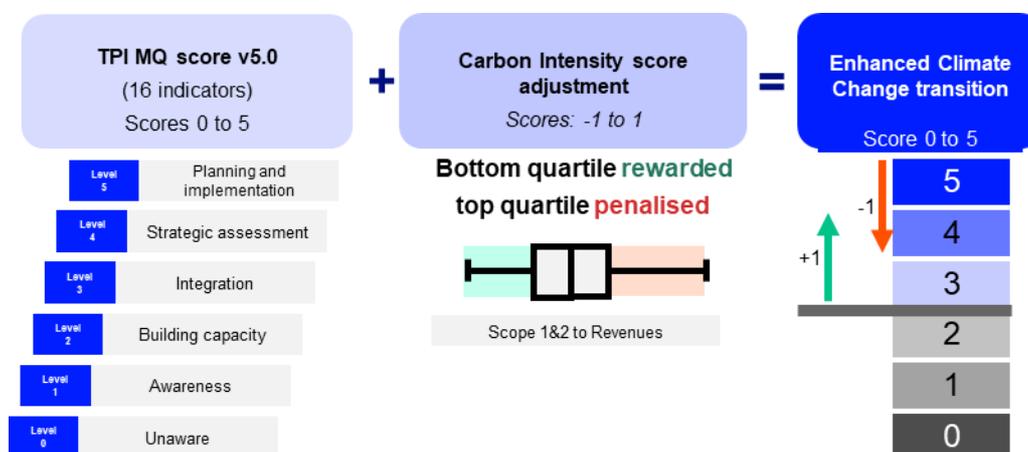


Figure 11 Climate Transition Overview

Materiality

The Climate Transition Theme is at least Material for all companies, given the potential of the climate transition to affect all parts of the economy. Three Materiality Groups with the highest direct carbon emissions are assessed as Critical, as is Real Estate given the contribution to carbon emissions from the built environment.

Materiality Group	Climate Transition
Basic Resources	Critical
Heavy Industry	Critical
Manufacturing Machinery & Equipment	Material
Manufacturing Household Goods	Material
Food & Beverage	Material
Transport & Logistics	Critical
Healthcare	Material

¹⁷ More background regarding the TPI MQ Score can be found in [Home - Transition Pathway Initiative](#)

¹⁸ On request of G20 Finance Ministers and Central Bank Governors, in 2015 the Financial Stability Board (FSB) created the Taskforce on Climate-related Financial Disclosures (TCFD) to improve and increase reporting of climate-related financial information.

Materiality Group	Climate Transition
Retail & Consumer Services	Material
Consulting & Business Services	Material
Media & Communications	Material
Financial Services	Material
Real Estate	Critical

Table 16 Materiality groups for the Climate Transition theme

Theme Metrics

The Climate Transition Theme Score uses the TPI MQ v5 methodology with an additional carbon intensity adjustment.

The [full methodology for the TPI MQ v5 model](#) can be found online. The methodology utilises 23 indicators covering policies, reporting, target-setting and Board responsibilities to determine a score from 0-5¹⁹.

The Carbon Intensity adjustment utilises the metric Total CO2 Equivalent Emissions to Revenues. Companies' Scope 1 and 2 carbon emissions revenue intensities are compared to those in the same Materiality Group to calculate thresholds; calculated in line with the process set out in 2.1.3. Companies in the lowest quartile for this metric are put in the reward group and those in the top quartile the penalising group. Additionally, companies that were in these groups in the previous year are given a buffer of 10 percentage points to reduce score turnover.

Companies with a TPI MQ Score of 3 or 4 are given a one point boost to form their Climate Transition Score if in the reward group. Companies with a TPI MQ Score of 4 or 5 are given a one point penalty to form their Climate Transition Score if in the penalising group. All other companies receive the TPI MQ Scores as their Climate Transition Scores.

Capping Metrics

This TPI MQ Score adopts a staircase approach whereby a company cannot advance to the next level without meeting the previous one, a similar but more stringent approach than the capping approach applied in other Themes.

Performance Metrics

This Theme does not have any performance metrics at the indicator level. The Carbon Intensity adjustment applies an approach like performance metrics but is applied at the Theme Score level.

¹⁹ The TPI MQ v5 methodology also allows companies to achieve a score of '5 star' when all indicators are met. For the purposes of ESG calculation this will also receive an integer score of 5.

3.2 Energy & Resource Use

Overview

The Theme assesses how a company approaches key manufacturing inputs – energy and resource management – and its policies, systems and processes to use these efficiently.

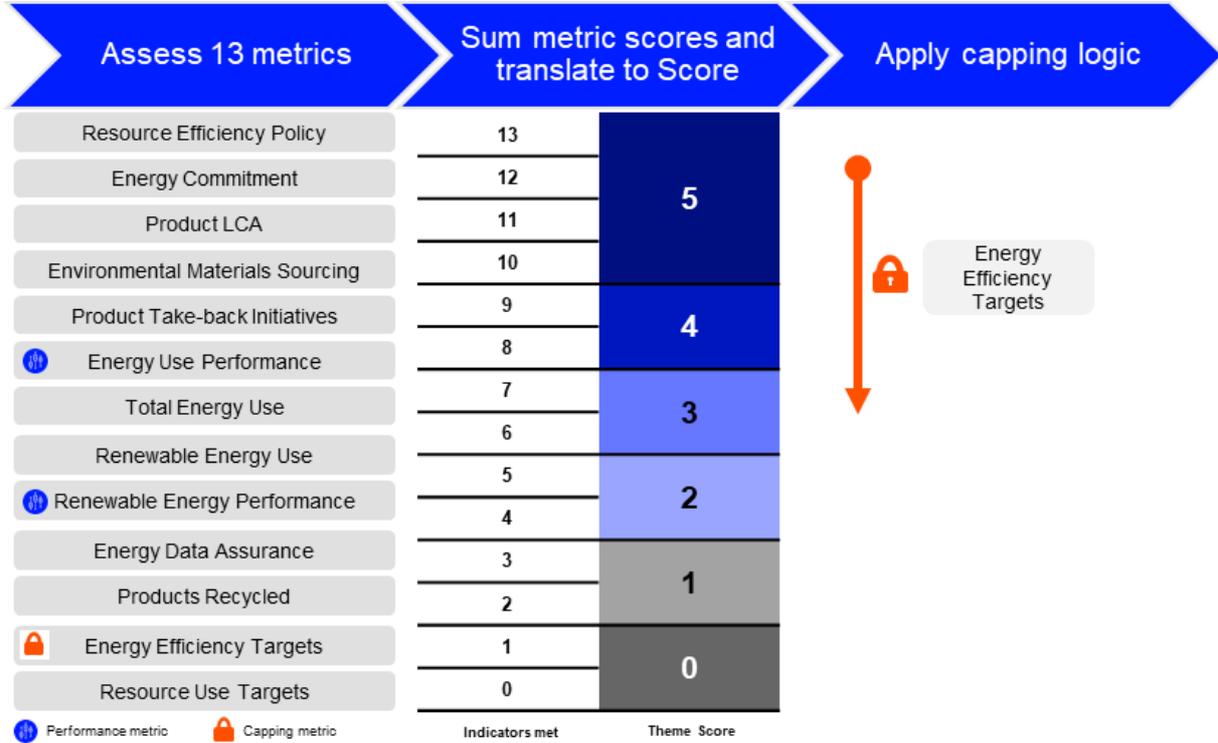


Figure 12 Energy & Resource use Score overview

Materiality

This Theme is assessed as Relevant or more for all companies, given at least some reliance on energy as a resource input, including in the service sectors. Companies in manufacturing-based Materiality Groups see elevated materiality of at least Material. The split between Critical and Material was determined by the source of energy or emissions, relative to the Climate Transition Theme. Groups that were Critical in the Climate Transition Theme are Material, whilst companies that are intensive users of purchased energy or inputs, are Critical.

The Basic Resources Materiality Group is assessed as Relevant for this Theme for two reasons; 1) it is in a different position to most other Groups at the start of supply chains using raw resources and 2) to assist with the relative balance of Themes within as, whilst in absolute terms it is energy or resource intensive, it may not be as material as other topics for such companies.

Materiality Group	Energy & Resource Use
Basic Resources	Relevant
Heavy Industry	Material
Manufacturing Machinery & Equipment	Critical
Manufacturing Household Goods	Critical
Food & Beverage	Critical
Transport & Logistics	Material
Healthcare	Relevant
Retail & Consumer Services	Relevant
Consulting & Business Services	Relevant

Materiality Group	Energy & Resource Use
Media & Communications	Relevant
Financial Services	Relevant
Real Estate	Material

Table 20: Materiality groups for the Energy & Resource Use theme

Theme metrics

The following metrics are applied to companies assessed in the Energy & Resource Use Theme:

Code	Title	Code	Description
Commitment	Resource Efficiency Policy	TR.PolicyResourceEfficiency	Does the company have a specific commitment to reduce resource use or improve resource efficiency?
	Energy Commitment	TR.EnergyCommitment	Energy policy commits to reduce energy use or improve energy efficiency
Strategy	Product Life Cycle Analysis	TR.LifeCycleAnalysis	Does the company use LCA (Lifecycle Analysis) in product or system design?
	Environmental Materials Sourcing	TR.EnvMaterialsSourcing	Does the company claim to use environmental criteria (e.g., life cycle assessment) to source or eliminate materials?
	Product Take-back initiatives	TR.TakebackRecyclingInitiatives	Does the company report about take-back procedures and recycling programs to reduce the potential risks of products entering the environment?
Metrics	Energy Use Performance	Derived from TR.EnergyUseTotal	Companies are rewarded for lower energy intensity relative to Materiality Group peers.
	Total Energy Use	TR.EnergyUseTotal	Total direct and indirect energy consumption in gigajoules.
	Renewable Energy Use	TR.TotalRenewableEnergy	Total primary renewable energy purchased and produced in gigajoules.
	Renewable Energy Use Performance	Derived from TR.EnergyUseTotal and TR.TotalRenewableEnergy	Companies are rewarded for using a greater proportion of renewable energy relative to Materiality Group peers.
	Energy Data Assurance	TR.EnergyConsumptionExternalAssurance	Has the company's operational energy consumption data been verified by a third party?
	Products Recycled	TR.ProductsRecoveredRecycle	Total weight of end of life products recovered as take back initiative to recycle or refurbish in tonnes.
Targets	Energy Efficiency Targets	TR.TargetsEnergyEfficiency	Has the company set targets or objectives to be achieved on energy efficiency?
	Resource Use Targets	TR.TargetsResourceUse	Does the company have quantified targets to reduce resource use or improve resource efficiency?

Table 17 Metrics assesses in the Energy & Resource Use Theme and associated descriptions

Capping Metrics

A company cannot score more than a 3 in this Theme unless they meet the metric Energy Efficiency Targets.

Performance Metrics

This Theme has two performance metrics.

Energy Use Performance is a relative performance metric using Total Energy Use normalised by USD revenues. Companies are rewarded for lower energy intensity relative to Materiality Group peers – those below the lower quartile threshold or in 10% buffer if previously rewarded. Thresholds for this metric are calculated in line with the process set out in [2.1.3](#).

Renewable Energy Use Performance is a relative performance metric using Total Renewable Energy To Energy Use. Companies are rewarded for using a greater proportion of renewable energy relative to Materiality Group peers – those above the upper quartile threshold or in 10% buffer if previously rewarded. Thresholds for this metric are calculated in line with the process set out in [2.1.3](#).

3.3 Biodiversity

Overview

The Theme focuses on the policies, systems and processes by which a company manages the impact or dependency its operations may have on biodiversity and natural ecosystems.

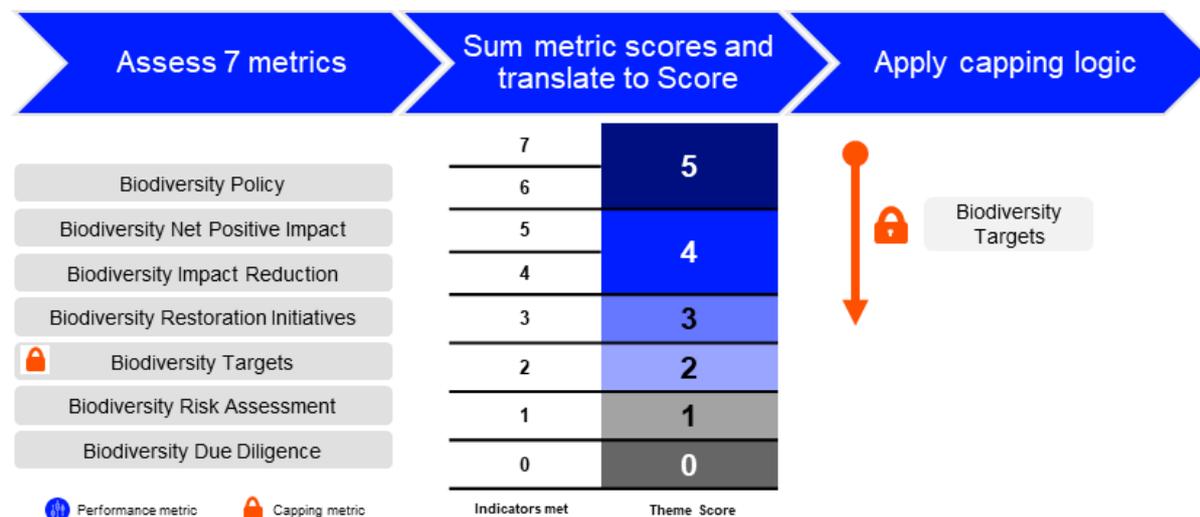


Figure 13 Biodiversity Theme Score

Materiality

Biodiversity Theme materiality is determined by assessing the company's core operations and their direct or indirect contributions to biodiversity loss. Materiality Groups that have direct impacts or dependencies upon biodiversity are Material for this Theme given the nascent nature of reporting in this area. Three service-based Materiality Groups are deemed currently Not Relevant for this Theme and given a zero weight in the LSEG ESG Score calculation. All other Materiality Groups are Relevant.

Materiality Group	Biodiversity
Basic Resources	Material
Heavy Industry	Relevant
Manufacturing Machinery & Equipment	Relevant
Manufacturing Household Goods	Relevant
Food & Beverage	Material
Transport & Logistics	Relevant
Healthcare	Relevant
Retail & Consumer Services	Relevant
Consulting & Business Services	Not Relevant
Media & Communications	Not Relevant
Financial Services	Not Relevant
Real Estate	Relevant

Table 18 Materiality groups for the biodiversity theme score

Theme Metrics

The following metrics are applied to companies assessed in the Biodiversity Theme:

Type	Title	Code	Description
Commitment	Biodiversity Policy	TR.BiodiversityCommitment	Does the company have a specific commitment to reduce or avoid impacts on biodiversity?
	Biodiversity Net Positive Impact	TR.BiodiversityNetPositiveImpact	Does the company have a commitment to net positive biodiversity impact or to compensate for negative impact?
Strategy	Biodiversity Impact Reduction	TR.BiodiversityImpactReduction	Does the company report on its impact on biodiversity or on activities to reduce its impact on the native ecosystems and species, as well as the biodiversity of protected and sensitive areas?
	Biodiversity Restoration Initiatives	TR.EnvRestorationInitiatives	Does the company report or provide information on company-generated initiatives to restore the environment?
Risk Assessment	Biodiversity Risk Assessment	TR.BiodiversityRiskAssessment	Does the company have a biodiversity-related risk assessment for existing operations or projects?
	Biodiversity Due Diligence	TR.BiodiversityDueDiligence	Does the company have a biodiversity-related risk assessment for potential new operations or projects (i.e. As part of due diligence)?
Targets	Biodiversity Targets	TR.BiodiversityTargets	Does the company have quantified, time-specific targets to address biodiversity impact at critical sites?

Table 19 Metrics used to compute the Biodiversity theme score

Capping Metrics

A company cannot score more than a 3 in this Theme unless they meet the metric Biodiversity Targets.

Performance Metrics

This Theme does not currently have any performance metrics given the limited comparability of quantitative measures for the topic.

3.4 Water Use

Overview

The Theme is designed to assess how companies approach fresh water management, use and scarcity risk. It is focused on how companies approach management of water risk through policies and planning, as well as publishing metrics that allow stakeholders to understand water footprints and dependency on water in areas of water stress.

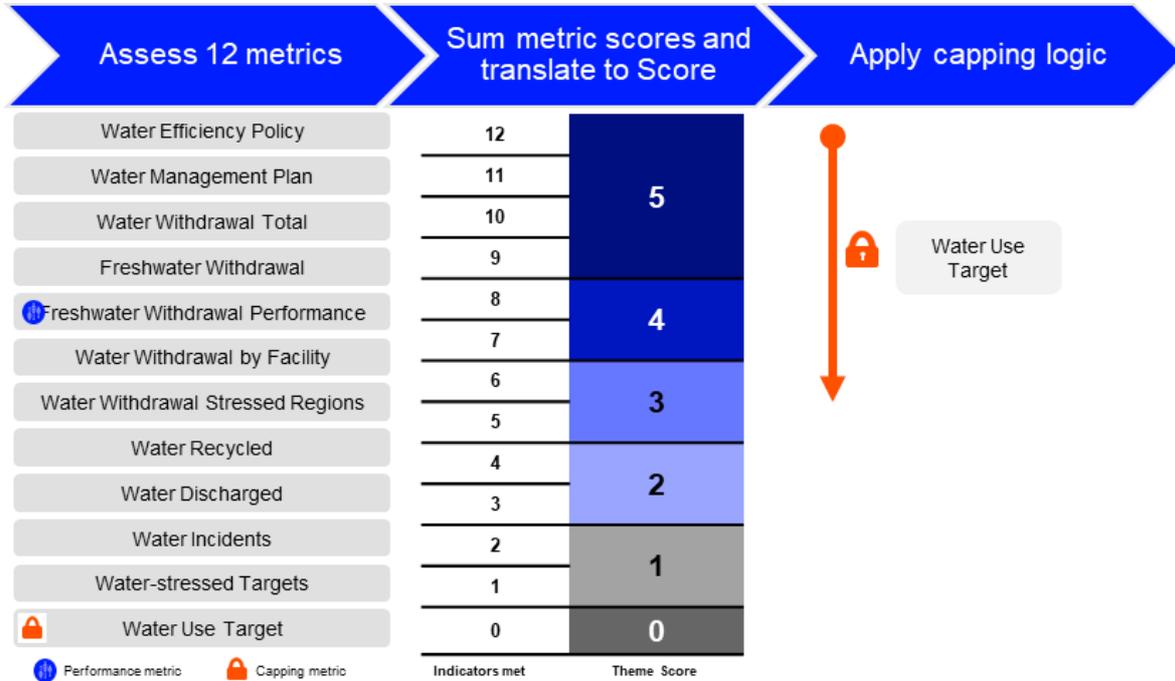


Figure 14 Water Use Theme Score

Materiality

Three service-based Materiality Groups that mainly use water for their staff are assessed as Not Relevant for this Theme. All other Themes are assessed as at least Relevant. The Basic Resources, Heavy Industry and Real Estate Materiality Groups were assessed as Material due to their high dependency of water and difficulty of moving their assets if in areas of water stress. Food and Beverage was assessed as critical given the dependency of such business models upon access to fresh water.

Materiality Group	Water Use
Basic Resources	Material
Heavy Industry	Material
Manufacturing Machinery & Equipment	Relevant
Manufacturing Household Goods	Relevant
Food & Beverage	Critical
Transport & Logistics	Relevant
Healthcare	Relevant
Retail & Consumer Services	Relevant
Consulting & Business Services	Not relevant
Media & Communications	Not relevant
Financial Services	Not relevant
Real Estate	Material

Table 20 Materiality groups for Water and Pollution theme

Theme Metrics

The following metrics are applied to companies assessed in the Water Use Theme:

Group	Title	Code	Description
Commitment	Water Efficiency Policy	TR.PolicyWaterEfficiency	Does the company have a policy to improve its water efficiency?
Strategy	Water Management Plan	TR.WaterManagementPlanDetails	Does the company disclose details of a water management plan for its operations?
Metrics	Fresh water Withdrawal	TR.FreshWaterWithdrawalTotal	Total fresh water withdrawal in cubic meters.
	Fresh water Withdrawal Performance	Derived from TR.FreshWaterWithdrawalTotal	Companies are rewarded for lower fresh water intensity relative to Materiality Group peers.
	Water Withdrawal by Facility	TR.FacilitiesWaterWithdrawal	Does the company disclose water withdrawal data at its site level?
	Water Withdrawal in Stressed Regions	TR.WaterWithdrawalinStressedRegions	Water withdrawals in water-stressed regions represents the total water withdrawn by the company for operational use in areas facing water scarcity.
	Water Recycled	TR.WaterRecycled	Amount of water recycled or reused in cubic meters.
	Water Discharged	TR.WaterDischarged	Total volume of water discharged in cubic meters.
	Water Incidents	TR.WaterIncidents	Does the company detail incidents of non-compliance with water quality or quantity permits, standards and regulations?
	Water Withdrawal total	TR.WaterWithdrawalTotal	Total water withdrawal in cubic meters.
Targets	Water Use target	TR.WaterUseTarget	Does the company have quantified targets to reduce water consumption or withdrawal at the company level?
	Water-stressed Targets	TR.WaterStressedTargets	Has the company set quantified targets or objectives to be achieved on water efficiency at sites impacted by water stress?

Table 21 Metrics assessed in the Water Use Theme and associated descriptions

Capping Metrics

A company cannot score more than a 3 in this Theme unless they meet the metric Water Use Target.

Performance Metrics

This Theme has one performance metric.

Fresh water Withdrawal Performance is a relative performance metric using Fresh water Withdrawal Total divided by normalised USD revenues. Companies are rewarded for lower fresh water intensity relative to Materiality Group peers – those below the lower quartile threshold or in 10% buffer if previously rewarded. Thresholds for this metric are calculated in line with the process set out in [2.1.3](#).

3.5 Waste & Pollution

Overview

This Theme assesses how a company approaches the byproducts of its production processes i.e. waste and pollution management including policies, measurement and targets.

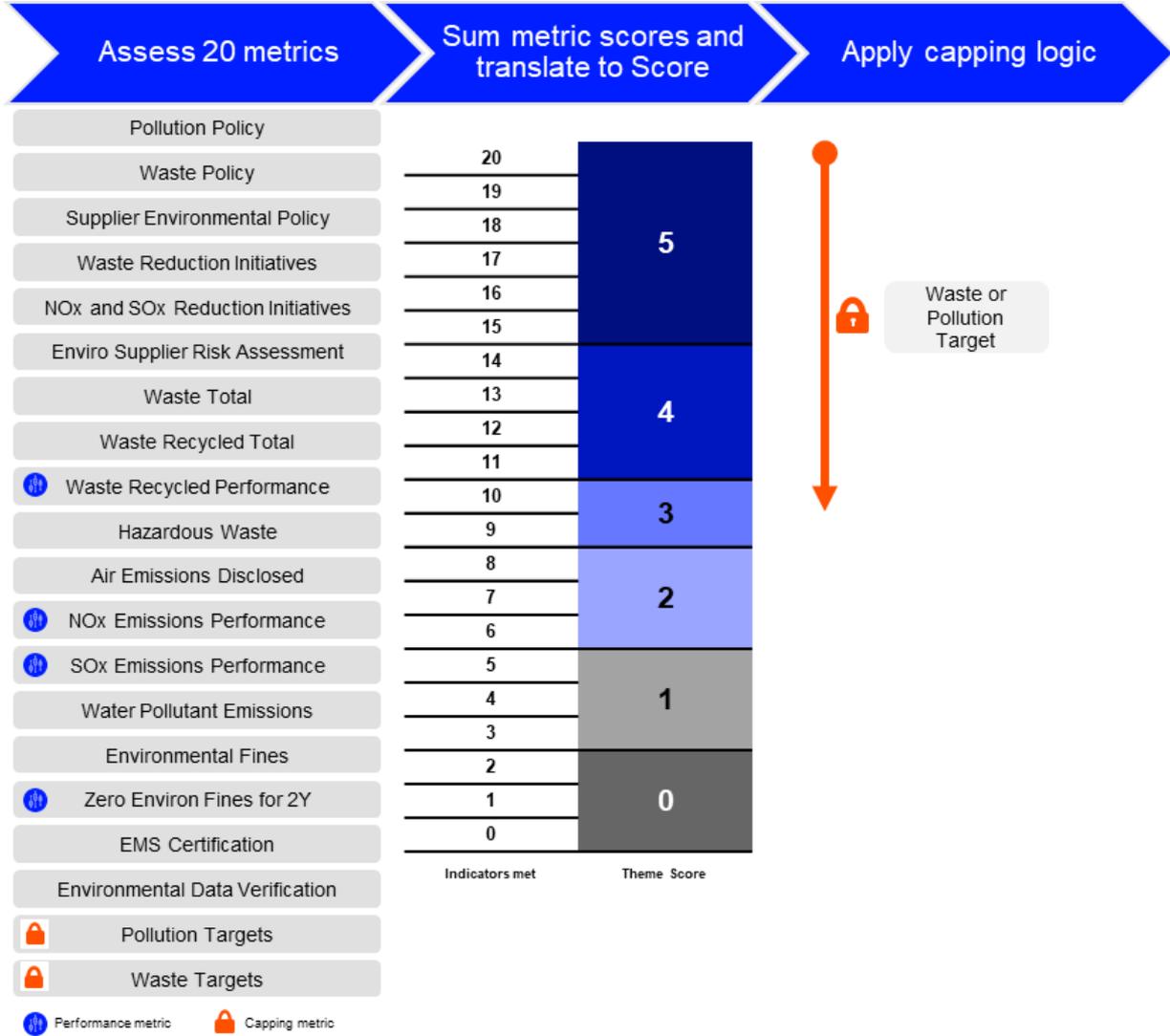


Figure 15 Waste & Pollution Theme Score Overview

Materiality

Three service-based Materiality Groups are assessed as Not Relevant for this Theme given a limited reliance on physical inputs and outputs. The Food & Beverage and Real Estate Materiality groups are assessed as Relevant for this Theme as, whilst they can have impacts in this area, have generally a lower exposure than other Materiality Groups.

Manufacturing and service-based Materiality Groups are assessed as Material for this Theme given the role that they can play in reducing raw input use, encouraging a circular economy, and reducing pollution.

Two Materiality Groups are assessed as Critical. Firstly, the Heavy Industry Group includes sectors such as Cement, Construction and Chemicals, which depend heavily on raw material inputs and can potentially generate pollution. Secondly, Manufacturing Machinery and Equipment is heavily dependent on material inputs requiring a focus on minimising waste.

The Basic Resources Materiality Group, whilst it has a significant potential for impacts in this Theme, was not assessed as Critical to balance the relative contribution of Themes to its overall Score.

Materiality Group	Waste & Pollution
Basic Resources	Material
Heavy Industry	Critical
Manufacturing Machinery & Equipment	Critical
Manufacturing Household Goods	Material
Food & Beverage	Relevant
Transport & Logistics	Material
Healthcare	Material
Retail & Consumer Services	Material
Consulting & Business Services	Not relevant
Media & Communications	Not relevant
Financial Services	Not relevant
Real Estate	Relevant

Table 22 Materiality groups for Waste & Pollution theme

Theme metrics

The following metrics are applied to companies assessed in the Waste & Pollution Theme:

Group	Title	Code	Description
Commitment	Pollution Policy	TR.PolicyPollution	Does the company have a specific commitment to reduce or avoid impacts of pollution?
	Waste Policy	TR.PolicyWaste	Does the company have a specific commitment to reduce or avoid waste to landfill?
	Supplier Environmental Policy	TR.SupplierEnvironmentalCommitment	Does the company have a supplier or sourcing policy or commitment statement that addresses environmental issues?
Strategy	Waste Reduction Initiatives	TR.WasteReductionInitiatives	Does the company report on initiatives to recycle, reduce,

Group	Title	Code	Description
			reuse, substitute, treat or phase out total waste?
	NOx and SOx Reduction Initiatives	TR.NOxSOxEmissionsReduction	Does the company report on initiatives to reduce, reuse, recycle, substitute, or phase out SOx (sulfur oxides) or NOx (nitrogen oxides) emissions?
Risk Assessment	Environmental Supplier Risk assessment	TR.SupplierEnvironmentalRiskAssessment	Does the company carry out a risk assessment for existing suppliers that considers environmental issues?
Metrics	Waste Total	TR.WasteTotal	Total amount of waste produced in tonnes.
	Waste Recycled Total	TR.WasteRecycledTotal	Total recycled and reused waste produced in tonnes.
	Waste Recycled Performance	Derived from TR.WasteRecycledTotal and TR.WasteTotal.	Companies are rewarded for higher waste recycling relative to Materiality Group peers.
	Hazardous Waste	TR.HazardousWaste	Total amount of hazardous waste produced in tonnes.
	Air Emissions Disclosed	Derived from TR.OzoneDepletingSubstances, TR.VOCEmissions, TR.NOxEmissions, TR.SOxEmissions	Does the company report data on one of: Ozone Depleting Substances, VOC Emissions, NOx Emissions, SOx Emissions.
	NOx Emissions Performance	Derived from TR.NOxEmissions.	Companies are rewarded for lower NOx Emissions intensity relative to Materiality Group peers.
	SOx Emissions Performance	Derived from TR.SOxEmissions.	Companies are rewarded for lower SOx Emissions intensity relative to Materiality Group peers.
	Water Pollutant Emissions	TR.WaterPollutantEmissions	Total weight of water pollutant emissions in tonnes.
	Environmental Fines	TR.SelfReportedEnvFines	Environmental fines as reported by the company.
	Zero Environmental Fines for 2Y	Derived from TR.SelfReportedEnvFines	Companies are rewarded if they report that they faced no environmental fines in the past 2 years.
	EMS Certification	TR.EMSCertifiedPct	The percentage of company sites or subsidiaries that are certified with any environmental management system.
	Environmental Data Verification	TR.EnvironmentalDataIndependentVerification	Has the company's operational environmental

Group	Title	Code	Description
			data been verified by an independent third party?
Targets	Pollution Targets	TR.TargetsPollution	Does the company have quantified, time-specific targets to reduce or avoid pollution to air or water?
	Waste Targets	TR.TargetsWaste	Does the company have quantified, time-specific targets to reduce or avoid waste?

Table 23 Metrics assesses in the Energy & Resource Use theme and associated descriptions

Capping Metrics

A company cannot score more than a 3 in this Theme unless they meet either the metric Pollution Targets or Waste Targets. A company does not have to meet both to meet the capping logic.

Performance Metrics

This Theme has four performance metrics.

Waste Recycled Performance is a relative performance metric using Waste Recycled Total divided by Waste Total. Companies are rewarded for higher waste recycling relative to Materiality Group peers – those below the upper quartile threshold or in 10% buffer if previously rewarded. Thresholds for this metric are calculated in line with the process set out in [2.1.3](#).

NOx Emissions Performance is a relative performance metric using NOx Emissions normalised by USD revenues. Companies are rewarded for lower NOx Emissions intensity relative to Materiality Group peers – those below the lower quartile threshold or in 10% buffer if previously rewarded. Thresholds for this metric are calculated in line with the process set out in [2.1.3](#).

SOx Emissions Performance is a relative performance metric using SOx Emissions normalised by USD revenues. Companies are rewarded for lower SOx Emissions intensity relative to Materiality Group peers – those below the lower quartile threshold or in 10% buffer if previously rewarded. Thresholds for this metric are calculated in line with the process set out in [2.1.3](#).

Zero Environmental Fine for 2 Years is an absolute performance metric derived from the metric Environmental Fines. Companies are rewarded if they report that they faced no environmental fines in the past 2 years.

3.6 Labour Relations

Overview

The Theme assesses how companies approach management of human capital. It includes metrics aligned with the ILO Core Labour Standards and an assessment of how diversity, equity and inclusion considerations are managed at the employee level.

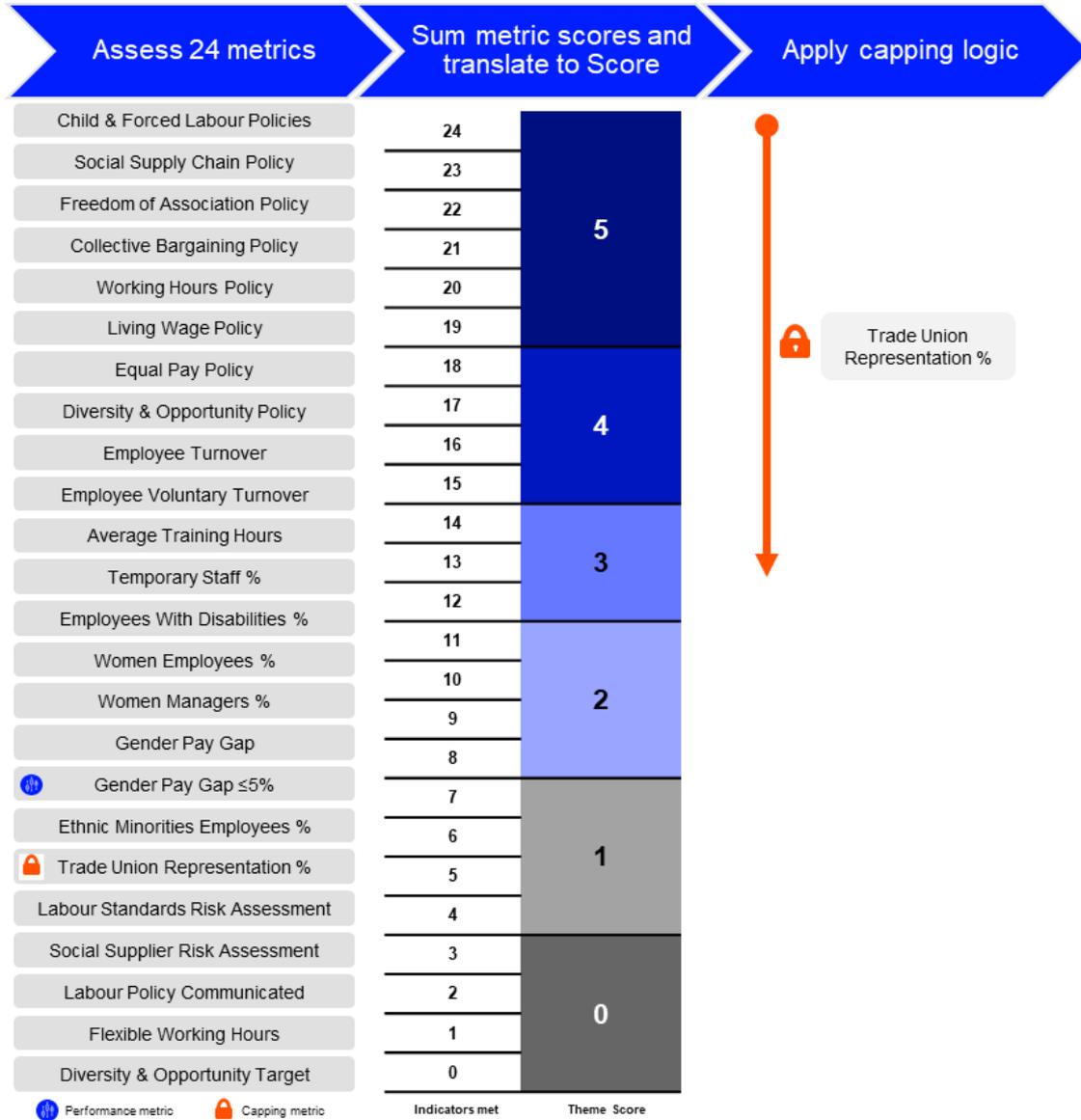


Figure 16 Labour Relations Theme Overview

Materiality

Whilst this Theme is at least Relevant for all companies, it is most pertinent for corporates with greater proportions of low-wage, low-skilled workers, where the ILO Core Labour Standards are critical or have a greater likelihood of not being responded. This includes industries with production lines or consumer services industries where limited qualifications and training are required. For this reason, Manufacturing Household Goods and Retail & Consumer Goods Materiality Groups are assessed as Critical. Other manufacturing and some service Materiality Groups with lower-skilled workers are also assessed as Material.

The Basic Resources and Heavy Industry Materiality Groups are assessed as relevant as workers tend to be more specialised and have a higher rate of unionisation or collective bargaining agreements. While the Media & Communications, Financial Services and Real Estate Materiality Groups tend to have higher average wages and are at lower risk of undermining Core Labour Standards.

Materiality Group	Labour Relations
Basic Resources	Relevant
Heavy Industry	Relevant
Manufacturing Machinery & Equipment	Material
Manufacturing Household Goods	Critical
Food & Beverage	Material
Transport & Logistics	Material
Healthcare	Material
Retail & Consumer Services	Critical
Consulting & Business Services	Material
Media & Communications	Relevant
Financial Services	Relevant
Real Estate	Relevant

Table 24 Materiality groups for the Labour Relations theme

Theme Metrics

The following metrics are applied to companies assessed in the Labour Relations Theme:

Group	Title	Code	Description
Commitment	Child Labour and Forced Labour Policies	Derived from TR.PolicyChildLabor and TR.PolicyForcedLabor	Company publishes a Policy covering Child Labor and Forced Labor.
	Social Supply Chain Policy	TR.SocialSupplyChainPolicy	Does the company have a supplier or sourcing policy or commitment statement that addresses social issues?
	Freedom of Association Policy	TR.PolicyFreedomofAssociation	Does the company describe, claim to have or mention the processes in place to ensure the freedom of association of its employees?
	Collective Bargaining Policy	TR.PolicyCollectiveBargaining	Does the company have a policy to protect the right to collective bargaining?
	Working Hours Policy	TR.PolicyWorkingHours	Does the company have a commitment to eliminate excessive working hours?
	Living Wage Policy	TR.PolicyLivingWage	Does the company support a living wage?
	Equal Pay Policy	TR.EqualPayforEqualWork	Does the company have a policy of equal pay for equal work?
	Diversity & Opportunity Policy	TR.PolicyDiversityOpportunity	Does the company have a policy to drive diversity and equal opportunity?
Metrics	Employee Turnover	TR.TurnoverEmployees	Percentage of employee turnover.
	Employee Voluntary Turnover	TR.VoluntaryTurnoverEmployees	Percentage of employee voluntary turnover.
	Average Training Hours	TR.AvgTrainingHours	Average hours of training per year per employee.
	Temporary Staff Proportion	TR.TemporaryStaffProportion	Temporary staff proportion represents the percentage of contractor or temporary staffs over total workforce that are employed temporarily or on a contract basis by the company.

Group	Title	Code	Description
	Employees With Disabilities Proportion	TR.EmployeesWithDisabilities	Percentage of employees with disabilities or special needs.
	Women Employees Proportion	TR.WomenEmployees	Percentage of women employees.
	Women Managers Proportion	TR.WomenManagers	Percentage of women managers.
	Gender Pay Gap	TR.GenderPayGapPctage	Percentage of remuneration of women to men, often for doing the same work.
	Gender Pay Gap ≤5%	Derived from TR.GenderPayGapPctage	Companies are rewarded if their reported ratio of female to male pay is greater than 95%.
	Ethnic Minorities Employees Proportion	TR.MinoritiesEmployeesPercentage	Percentage of employees classified under racial/ethnicity minority groups.
	Trade Union Representation Proportion	TR.TradeUnionRep	Percentage of employees represented by independent trade union organizations or covered by collective bargaining agreements.
Risk Assessment	Labour Standards Risk Assessment	TR.RiskAssessmentLabourStandards	Has the company carried out a risk assessment regarding labour standards for existing operations or potential new operations or projects?
	Social Issues Supplier Risk Assessment	TR.SocialSupplyRiskAssessment	Has a risk assessment regarding social issues in the supply chain been carried out?
Strategy	Labour Policy Communicated	TR.CommunicationofLabourPolicy	Does the company communicate its labour standards policy to employees and translate policies into local languages?
	Flexible Working Hours	TR.FlexibleWorkingHours	Does the company claim to provide flexible working hours or working hours that promote a work-life balance?
Target	Diversity & Opportunity Target	TR.TargetsDiversityOpportunity	Has the company set targets or objectives to be achieved on diversity and equal opportunity?

Table 25 Metrics assessed in the Labour Relations theme and associated descriptions

Capping Metrics

A company cannot score more than a 3 in this Theme unless they meet the metric Trade Union Representation.

Performance Metrics

This Theme has one performance metric. Gender Pay Gap ≤5% is an absolute performance metric using the metric Gender Pay Gap Percentage. Companies are rewarded if their reported ratio of female to male pay is greater than 95%.

3.7 Health & Safety

Overview

The Theme focuses on how the company oversees and monitors safety performance and the quantitative outcome of its efforts, by drawing on key globally recognised reporting standards. Companies cannot score above a 3 in this Theme if they have recent fatalities.

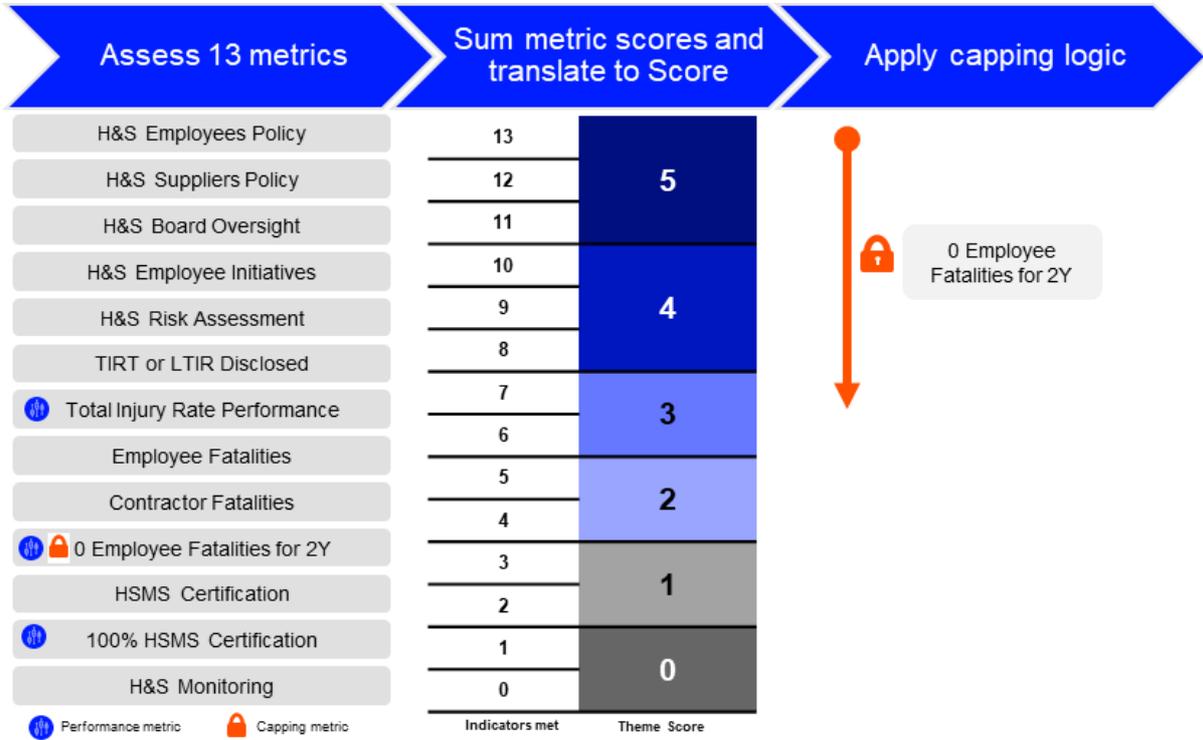


Figure 17 Health & Safety Theme Score Overview

Materiality

Three service-based Materiality Groups were assessed as Not Relevant for this Theme given their dependency on office-based workers which, whilst bearing some risk, is relatively lower risk than in manufacturing or extractives industry.

The Real Estate Materiality Group is assessed as Relevant for this Theme; whilst some companies may have low numbers of direct employees, the construction, administration or maintenance of real estate, whether directly employed or in the supply chain, can present risks.

All other Materiality Groups are assessed as at least Material. Transport & Logistics was selected as Critical for this Theme due to its high rate of injuries to employees compared to other Groups. Whilst other Materiality Groups did also have high injury rates, the materiality level was not elevated from Material to maintain the relative balance between Themes in their Scores.

Materiality Group	Health & Safety
Basic Resources	Material
Heavy Industry	Material
Manufacturing Machinery & Equipment	Material
Manufacturing Household Goods	Material
Food & Beverage	Material
Transport & Logistics	Critical
Healthcare	Material
Retail & Consumer Services	Material

Materiality Group	Health & Safety
Consulting & Business Services	Not Relevant
Media & Communications	Not Relevant
Financial Services	Not Relevant
Real Estate	Relevant

Table 26 Materiality groups for Health & Safety theme

Theme Metrics

The following metrics are applied to companies assessed in the Health & Safety Theme:

Group	Title	Code	Description
Commitment	Health & Safety Employees Policy	TR.EmployeeHealthSafetyPolicy	Does the company have a policy to improve employee health & safety?
	Health & Safety Suppliers Policy	TR.SupplyChainHSPolicy	Does the company have a policy to improve employee health & safety in its supply chain?
Governance	Health & Safety Board Oversight	TR.BoardOversightofHealthandSafety	Does the company provide evidence of Board or Board committee oversight of management of health and safety risks?
Strategy	Health & Safety Employee Initiatives	TR.EmployeeSafetyInitiativeParticipation	Has the company involved staff in safety improvement initiatives?
Risk Assessment	Health & Safety Risk Assessment	TR.RiskAssessmentHealthandSafety	Has the company carried out a risk assessment regarding health and safety for its operations (existing and new)?
Metrics	TIRT or LTIR Disclosed (composite of 2 metrics)	Derived from TR.TIRTtotal and TR.LTIRTtotal	The company discloses either its Total Injury Rate or its Lost Time Injury Rate.
	Total Injury Rate Performance	Derived from TR.TIRTtotal	Companies are rewarded for lower total injury rates relative to Materiality Group peers.
	Employee Fatalities	TR.EmployeeFatalities	Number of employee fatalities resulting from operational accidents.
	Contractor Fatalities	TR.ContractorFatalities	Number of contractor fatalities resulting from operational accidents.
	Zero Employee Fatalities for 2 Years	Derived from TR.EmployeeFatalities	Companies are rewarded for reporting zero employee fatalities over the past two financial years.
	HSMS Certification	TR.HSMSCertifiedPercent	The percentage of the company sites or subsidiaries that are certified with any occupational health and safety management system (OHSMS).

Group	Title	Code	Description
	100% HSMS Certification	Derived from TR.HSMSCertifiedPercent	Companies are rewarded for reporting that all sites are certified with an occupational health and safety management scheme.
Targets	Health & Safety Monitoring	TR.SafetyPerformanceMonitoring	Does the company monitor safety performance and progress against previously set targets or against industry standards?

Table 27 Metrics assesses in the Health & Safety theme and associated descriptions

Capping Metrics

A company cannot score more than a 3 in this Theme unless they meet the performance metric Zero Employee Fatalities for 2 Years.

Performance Metrics

This Theme has three performance metrics.

Zero Employee Fatalities for 2 Years is an absolute performance metric using Employee Fatalities. Companies are rewarded for reporting zero employee fatalities over the past two financial years.

Total Injury Rate Performance is a relative performance metric using Total Injury Rate (considering both employee and contractor injury rates). Companies are rewarded for lower total injury rates relative to Materiality Group peers – those below the lower quartile threshold or in 10% buffer if previously rewarded. Thresholds for this metric are calculated in line with the process set out in [2.1.3](#).

100% HSMS Certification is an absolute performance metric using HSMS Certification. Companies are rewarded for reporting that all sites are certified with an occupational health and safety management scheme.

3.8 Human Rights & Community

Overview

The Theme focuses on how a company manages the human rights of external stakeholders and local communities. The indicators are designed to align with key Human Rights frameworks and are complemented by additional indicators on embedding human rights training.

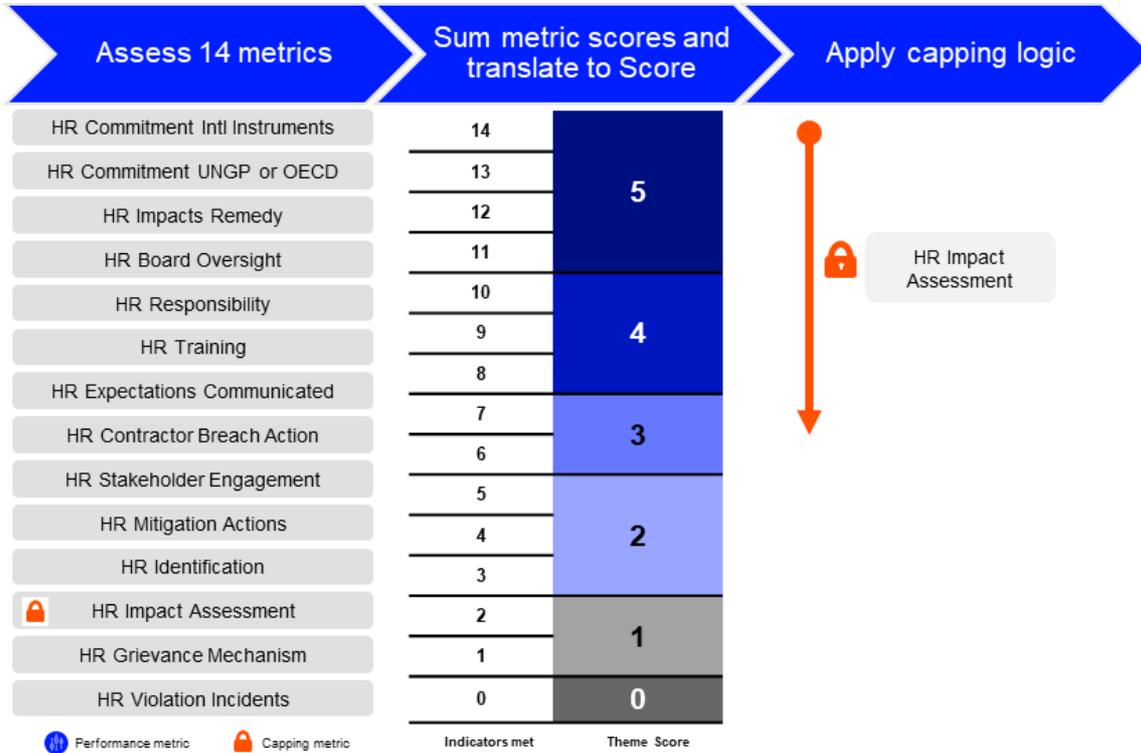


Figure 18 Human Rights & Community Theme Score Overview

Materiality

This Theme is considered Relevant for all companies and the OECD Guidelines for Multinational Enterprises²⁰ make clear that “all enterprises should respect the internationally recognised human rights of those affected by their activities”.

Two Materiality Groups, Basic Resources and Heavy Industry, that are more likely to impact the human right of non-employee stakeholders (particularly local communities) are assessed as Material for this Theme.

No Materiality Group was selected as Critical for this Theme to maintain the relative balance of Themes in their overall Scores.

Materiality Group	Human Rights
Basic Resources	Material
Heavy Industry	Material
Manufacturing Machinery & Equipment	Relevant
Manufacturing Household Goods	Relevant
Food & Beverage	Relevant
Transport & Logistics	Relevant
Healthcare	Relevant
Retail & Consumer Services	Relevant
Consulting & Business Services	Relevant

²⁰ See [MNE Guidelines - Organisation for Economic Co-operation and Development](#)

Media & Communications	Relevant
Financial Services	Relevant
Real Estate	Relevant

Table 28 Materiality groups for the Human Rights & Community theme

Theme Metrics

The following metrics are applied to companies assessed in the Human Rights Theme:

Group	Title	Code	Description
Commitment	Human Rights Commitment International Instruments	TR.CommitmentonHumanRights	Does the company's commitment to human rights include reference to international human rights instruments, including those contained within the International Bill of Human Rights?
	Human Rights Commitment UNGP or OECD	TR.CommitmenttoUnGuidingPrinciplesorOECDGuidelines	Does the company make a specific commitment to apply either the United Nations guiding principles on business and human rights or the OECD guidelines for multinational enterprises?
	Human Rights Impacts Remedy	TR.RemedyHumanRightsImpacts	Does the company commit to remedy affected parties where it has been identified that it has caused or contributed to human rights impacts?
Governance	Human Rights Board Oversight	TR.HumanRightsBoardOversight	Does the company assign oversight responsibility for human rights to a member or committee of the Board?
	Human Rights Responsibility	TR.HumanRightsResponsibility	Has the company clearly allocated day-to-day responsibilities and resources for oversight of human rights to relevant functions?
Strategy	Human Rights Training	TR.InternalHumanRightsTraining	Does the company train staff or specific staff/departments on human rights policy?
	Human Rights Expectations Communicated	TR.EmbeddingHumanRights	Has the company clearly communicated human rights expectations and responsibilities to stakeholders, including business partners, staff or specific staff/departments?
	Human Rights Contractor Breach Action	TR.HumanRightsContractorBreaches	Does the company report or show to be ready to end a partnership with a sourcing partner if human rights criteria are not met?
	Human Rights Stakeholder Engagement	TR.HumanRightsStakeholderEngagement	Has the company undertaken stakeholder engagement on human rights issues?
	Human Rights Mitigation Actions	TR.MitigationHumanRightsIssues	Has the company disclosed actions implemented for avoidance, prevention and mitigation of human rights issues?
Risk Assessment	Human Rights Identification	TR.HumanRightsIdentification	Has the company identified and disclosed salient industry or business-specific human rights issues?

Group	Title	Code	Description
	Human Rights Impact Assessment	TR.ImpactAssessmentHumanRights	Does the company proactively assesses its human rights impacts on an on-going basis, as part of core business processes?
	Human Rights Grievance Mechanism	TR.GrievanceMechanismsHumanRights	Does the company have formal grievance mechanisms which cover human rights explicitly, guarantee confidentiality or anonymity, and are available to internal and external stakeholders?
Metrics	Human Rights Violation Incidents	TR.ViolationsofHumanRights	Does the company disclose incidents of human rights violations?

Table 29 Metrics assessed in the Human Rights & Community theme and associated descriptions

[Capping Metrics](#)

A company cannot score more than a 3 in this Theme unless they meet the metric Human Rights Impact Assessment.

[Performance Metrics](#)

This Theme currently has no performance metrics.

3.9 Board & Management

Overview

The Theme assesses companies’ approaches to organising their Board and C-Suite governance. It focuses on key aspects of board structure including experience, independence, committees, management of conflicts of interest, and setting executive compensation.

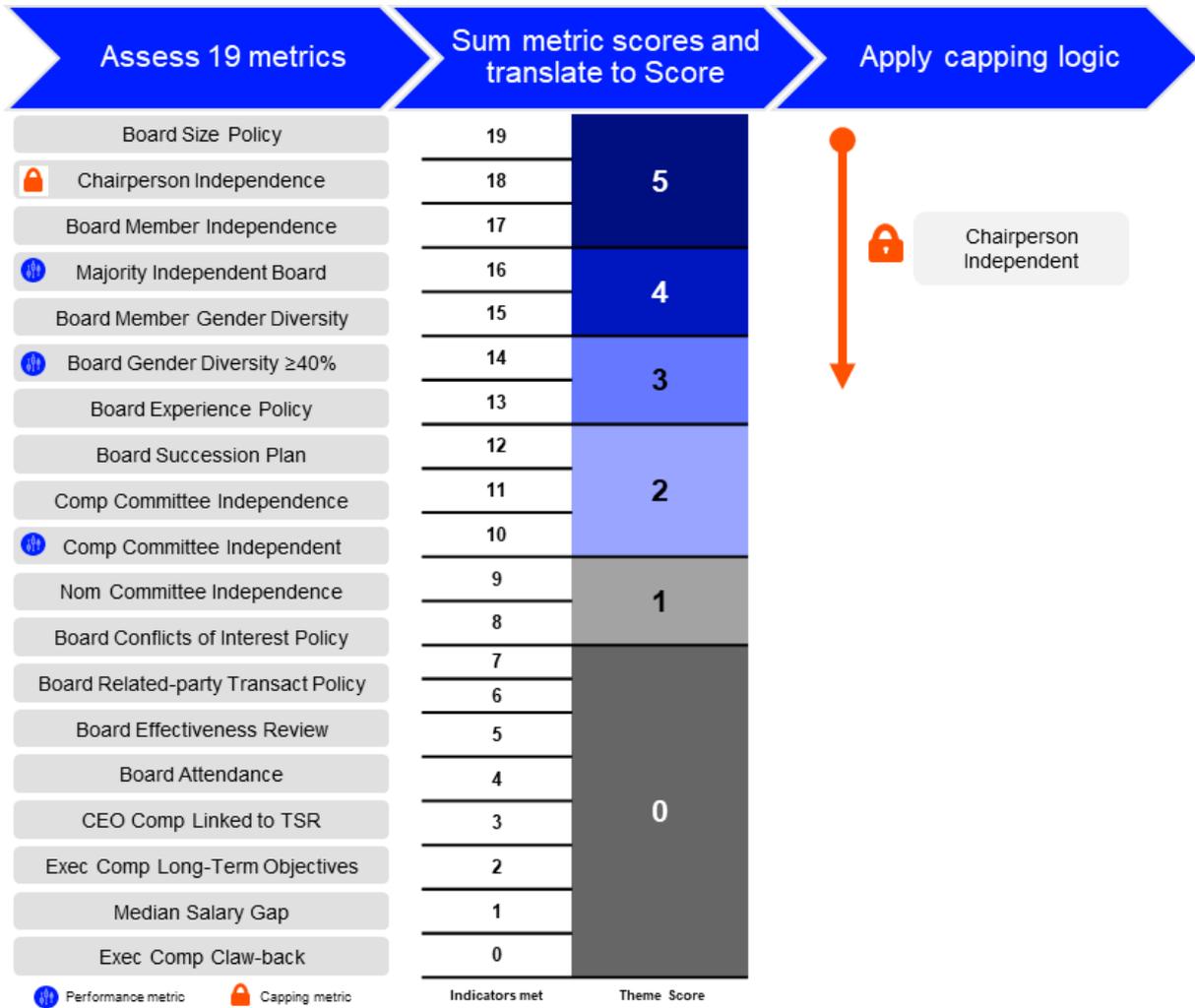


Figure 19 Board and Management Theme Overview

Materiality

This Theme is equally Material to all companies given the importance of Corporate Governance structures to ensure sound management.

Materiality Group	Board & Management
Basic Resources	Material
Heavy Industry	Material
Manufacturing Machinery & Equipment	Material
Manufacturing Household Goods	Material
Food & Beverage	Material
Transport & Logistics	Material

Materiality Group	Board & Management
Healthcare	Material
Retail & Consumer Services	Material
Consulting & Business Services	Material
Media & Communications	Material
Financial Services	Material
Real Estate	Material

Table 30 Materiality groups for the Board & Management theme

Theme Metrics

The following metrics are applied to companies assessed in the Board & Management Theme:

Group	Title	Code	Description
Board composition	Board Size Policy	TR.PolicyBoardSize	Does the company have a policy regarding the size of its Board?
	Chairperson Independence	TR.AnalyticChairpersonIndependent	Is the company chairperson independent?
	Board Member Independence	TR.AnalyticIndepBoard	Percentage of independent Board members as reported by the company.
	Majority Independent Board Members	Derived from TR.AnalyticIndepBoard	Companies are rewarded for having a majority of independent directors on their Board.
	Board Member Gender Diversity	TR.AnalyticBoardFemale	Percentage of women on the Board.
	Board Gender Diversity ≥40%	Derived from TR.AnalyticBoardFemale	Companies are rewarded for having at least 40% female Board members.
	Board Experience Policy	TR.PolicyBoardExperience	Does the company have a policy regarding the adequate experience on its Board?
	Board Succession Plan	TR.BoardSuccessionPlan	Does the company have a succession plan for executive management (key Board members) in the event of unforeseen circumstances?
Board committees	Compensation Committee Independence	TR.AnalyticCompCommInd	Percentage of independent Board members on the compensation committee as stipulated by the company.
	Compensation Committee Independent	Derived from TR.AnalyticCompCommInd	Companies are rewarded for having 100% of directors on their Compensation Committee classed as independent.
	Nomination Committee Independence	TR.AnalyticNominationCommInd	Percentage of independent Board members on the nomination committee as stipulated by the company.
Conflicts	Board Conflicts of Interest Policy	TR.BoardConflictsOfInterest	Does the Board address conflicts of interest?
	Board Related-party	TR.BoardRelatedPartyTransactions	Does the Board address related party transactions?

Group	Title	Code	Description
	Transactions Policy		
Effectiveness	Board Effectiveness Review	TR.BoardEffectivenessReview	Does the Board conduct a periodic review of its effectiveness?
	Board Attendance	TR.AnalyticBoardAttendance	Does the company publish information about the attendance of the individual Board members at board meetings?
Executive compensation	CEO Compensation Linked to Total Shareholder Return	TR.CEOCompTSR	Is the CEO's compensation linked to total shareholder return (TSR)?
	Executive Compensation Long-term Objectives	TR.AnalyticExecCompLTOjectives	Is the management and Board members remuneration partly linked to objectives or targets which are more than two years forward looking?
	Median Salary Gap	TR.MedianSalaryGap	Ratio of CEO's total compensation over median employee compensation as reported by the company.
	Executive Compensation Claw-back	TR.ExecutiveClawBack	Does remuneration for senior executives incorporate claw-back or malus provisions?

Table 33: Metrics assessed in the Board & Management theme and associated descriptions

Capping Metrics

A company cannot score more than a 3 in this Theme unless they meet the metric Chairperson Independent.

Performance Metrics

This Theme has three performance metrics.

Majority Independent Board is an absolute performance metric using Independent Board Members. Companies are rewarded for having more than 50% of their directors on their board classed as independent.

Compensation Committee Independent is an absolute performance metric using Compensation Committee Independence. Companies are rewarded for having 100% of directors on their Compensation Committee classed as independent.

Board Gender Diversity $\geq 40\%$ is an absolute performance metric using Board Gender Diversity Percent. Companies are rewarded for having at least 40% female board members.

3.10 Shareholder Rights

Overview

This Theme focuses on company policies towards outside, minority shareholder rights and whether they have the right to vote on key areas of corporate strategy in accordance with their level of ownership. This includes the regular right to vote on items such as director appointments and executive compensation, whilst a Score higher than 3 cannot be achieved unless the one-share-one-vote principle is adhered to.

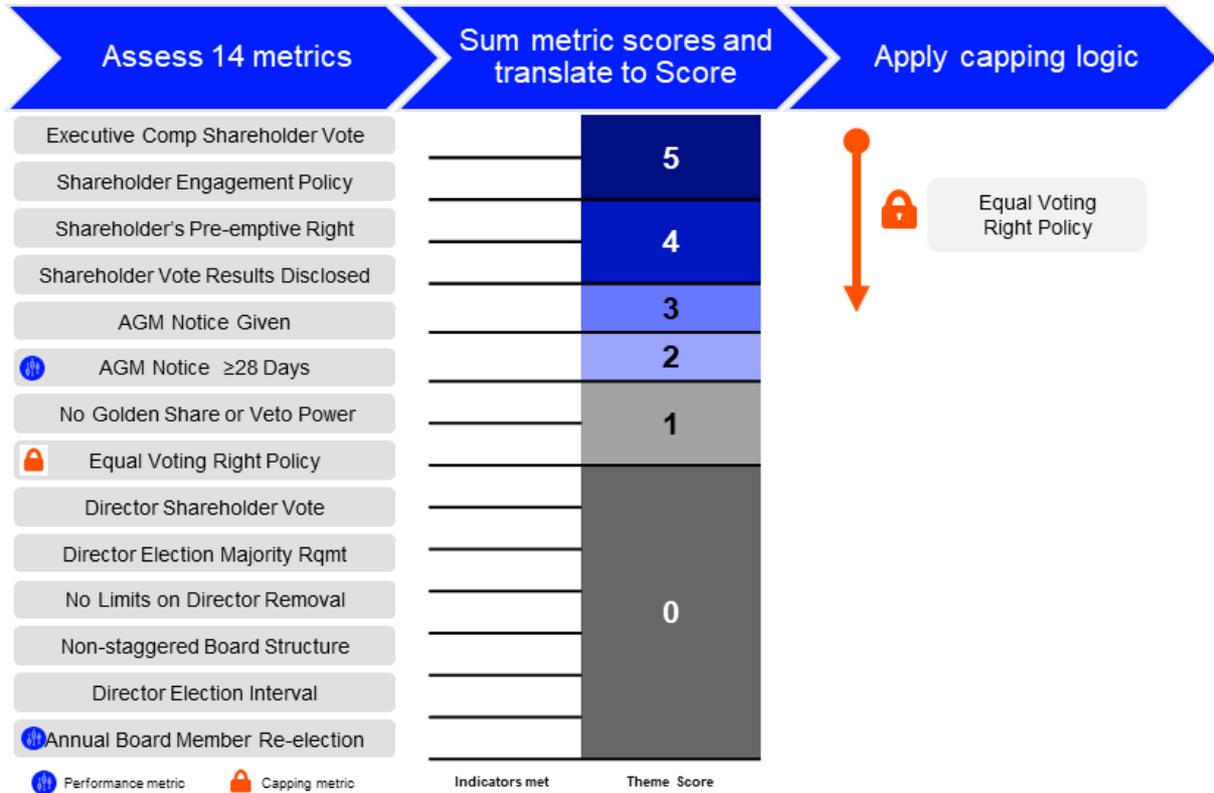


Figure 20 Shareholder Rights Theme Overview

Materiality

All listed companies are assessed as Material for this Theme given the equal importance of shareholders being able to have their views considered regarding key elements of corporate strategy and director appointments.

Materiality Group	Shareholder Rights
Basic Resources	Material
Heavy Industry	Material
Manufacturing Machinery & Equipment	Material
Manufacturing Household Goods	Material
Food & Beverage	Material
Transport & Logistics	Material
Healthcare	Material
Retail & Consumer Services	Material
Consulting & Business Services	Material
Media & Communications	Material
Financial Services	Material
Real Estate	Material

Table 31 Materiality groups for the Shareholders Rights theme

Theme overview

The following metrics are applied to companies assessed in the Shareholder Rights Theme:

Group	Title	Code	Description
Shareholder Rights	Executive Compensation Shareholder Vote	TR.ShareholdersVoteExecPay	Do the company's shareholders have the right to vote on executive compensation?
	Shareholder Engagement Policy	TR.PolicyShareholderEngagement	Does the company have a policy to facilitate shareholder engagement, resolutions or proposals?
	Shareholder's Pre-emptive Right	TR.PreemptiveRights	Does the company grant pre-emptive rights to existing shareholders?
	Shareholder Voting Results Disclosed	TR.DisclosureofVotingResults	Does the company provide a detailed disclosure of shareholder voting results?
	AGM Notice Given	Derived from TR.AGMDate and TR.AGMNoticeFilingDate	Does the company disclose both its AGM Date and when it filed the AGM Notice?
	AGM Notice ≥28 Days	Derived from TR.AGMDate and TR.AGMNoticeFilingDate	Companies are rewarded for providing shareholders with at least 28 days' notice of an AGM.
Voting Rights	No Golden Share or Veto Power	Derived from TR.VetoPowerGoldenShare	Does a single shareholder hold veto or is there a Golden Share?
	Equal Voting Right Policy	TR.PolicyEqualVotingRight	Does the company have a policy to apply the one-share, one-vote principle?
Director Elections	Director Shareholder Vote	TR.ShareholderDirectorVotes	Do shareholders have the right to vote on director appointments and dismissals?
	Director Election Majority Requirement	TR.DirectorsElectionMajority	Are the company's board members generally elected with a majority vote?
	No Limitations on Removal of Directors	Derived from TR.LimitationRemovalDirectors	No limitations on the shareholders' right to remove board members (i.e., only for cause, supermajority vote required, etc.) has been identified.
	Non-Staggered Board Structure	TR.StaggeredBoard	Does the company have a staggered board structure?
	Director Election Interval	TR.BoardTermDuration	The smallest interval of years in which the board members are subject to re-election.
	Annual Board Member Re-election	Derived from TR.BoardTermDuration	Companies are rewarded for allowing shareholders to vote on the re-election of all directors annually.

Table 37: Metrics assessed in the Shareholders Rights theme and associated descriptions

Capping Metrics

A company cannot score more than a 3 in this Theme unless they meet the metric Equal Voting Right Policy.

Performance Metrics

This Theme has two performance metrics.

AGM Notice ≥28 Days is an absolute performance metric using AGM Date and AGM Notice Filing Date. Companies are rewarded for providing shareholders with at least 28 days' notice of an AGM.

Annual Board Member Re-election is an absolute performance metric using Board Member Term Duration. Companies are rewarded for allowing shareholders to vote on the re-election of all directors annually.

3.11 Conduct & Anti-Corruption

Overview

The Theme assesses how a company approaches the management of key business risks including Corruption, Cyber, and competitive behaviour. It also analyses how the company approaches risk through its Code of Conduct and responds when incidents occur.

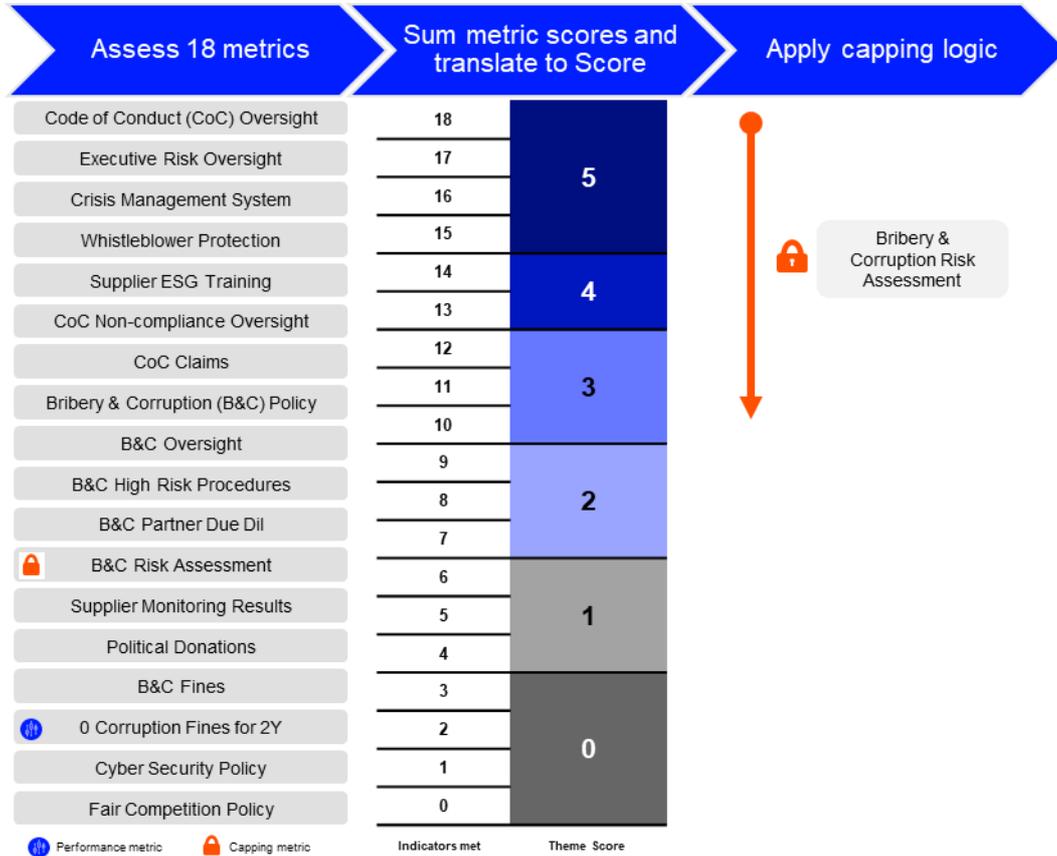


Figure 21 Conduct & Anti-Corruption Theme Overview

Materiality

This Theme is at least Relevant for all companies who require some element of considerations around a code of conduct, whistleblowing and risk management towards developing a strong culture.

Materiality Groups that are elevated tend to have a greater propensity for interactions with governments or regulations or a heightened level of corruption risk.

Materiality Group	Conduct & Anti-Corruption
Basic Resources	Critical
Heavy Industry	Material
Manufacturing Machinery & Equipment	Relevant
Manufacturing Household Goods	Relevant
Food & Beverage	Relevant
Transport & Logistics	Material
Healthcare	Critical
Retail & Consumer Services	Relevant
Consulting & Business Services	Material
Media & Communications	Relevant
Financial Services	Critical
Real Estate	Material

Table 32 Materiality groups for the Conduct & Anti-Corruption theme

Theme Metrics

The following metrics are applied to companies assessed in the Conduct & Anti-Corruption Theme:

Group	Title	Code	Description
Conduct and Anti-Corruption	Code Of Conduct Oversight	TR.CodeofConductOversight	Is the company's code of conduct (or equivalent) overseen by the Board?
	Executive Risk Oversight	TR.CSuiteRiskOversight	Does the company have a senior executive (C-suite) responsible for Corruption risk management?
	Crisis Management System	TR.CrisisMgtSystems	Does the company report on crisis management systems or reputation disaster recovery plans to reduce or minimize the effects of reputation disasters?
	Whistleblower Protection	TR.WhistleblowerProtection	Does the company have a provision or comply with regulations protecting whistleblowers?
	Supplier ESG training	TR.SupplierEsgTraining	Does the company provide training in environmental, social or governance factors for its suppliers?
	Code Of Conduct Non-compliance Procedure	TR.CodeofConductNonCompliance	Does the company have procedures to address non-compliance with the code of conduct (or equivalent)?
	Code Of Conduct Claims	TR.CodeofConductClaims	Code of conduct claims represents the number of non-compliance incidents occurred in the company during the fiscal year.
Anti-Corruption	Bribery & Corruption Policy	TR.PolicyBriberyandCorruption	Does the company describe in the code of conduct that it strives to avoid bribery and corruption at all its operations?
	Bribery & Corruption Oversight	TR.CorruptionOversight	Does the Board have oversight of anti-corruption policy?
	Bribery & Corruption - High Risk Procedures	TR.CorruptionProceduresforHighRiskOperations	Does the company have procedures in place to address corruption in operations that are assessed to be "high risk"?
	Bribery & Corruption Partner Due Diligence	TR.CorruptionDueDiligence	Does the company conduct due diligence of new business partners which covers anti-corruption?
	Bribery & Corruption Risk Assessment	TR.CorruptionRiskAssessment	Does the company conduct a corruption risk assessment for its operations?
	Supplier Monitoring Results	TR.FindingsfromSupplierMonitoring	Does the company disclose results of supplier monitoring or auditing and specific actions taken on non-compliance issues?
	Political Donations	TR.PoliticalContributions	Total amount of political donations, support of political candidates or contributions to

Group	Title	Code	Description
			parties as reported by the company.
	Bribery & Corruption Fines	TR.CorruptionFines	Corruption fines represent the fines or penalties paid by the company for corrupt practices during the year.
	Zero Corruption Fines for 2Y	Derived from TR.CorruptionFines	Companies are rewarded for reporting zero corruption-related fines over the past two financial years.
Specific Risks	Cyber Security Policy	TR.PolicyCyberSecurity	Does the company have a policy on cyber security in place to protect from cyber-attack, unauthorized access & data leaks, etc.?
	Fair Competition Policy	TR.PolicyFairCompetition	Does the company describe in the code of conduct that it strives to be a fair competitor?

Table 33 Metrics assessed in the Conduct & Anti-Corruption theme and associated descriptions

Capping Metrics

A company cannot score more than a 3 in this Theme unless they meet the metric Executive Risk Oversight.

Performance Metrics

This Theme has one performance metric.

Zero Corruption Fines for 2 Years is an absolute performance metric using Corruption Fines. Companies are rewarded for reporting zero corruption-related fines over the past two financial years.

3.12 Tax Transparency & Accounting

Overview

This Theme assesses companies' approaches to tax transparency and the fair payment of tax in jurisdictions in which they operate. It also looks at the role of the Audit Committee, and its independence, regarding transparency around tax affairs and the relationship with the external auditor of the financial statements. A company cannot Score more than a 3 in this Theme unless it commits to align tax payments with the location of revenue generation.

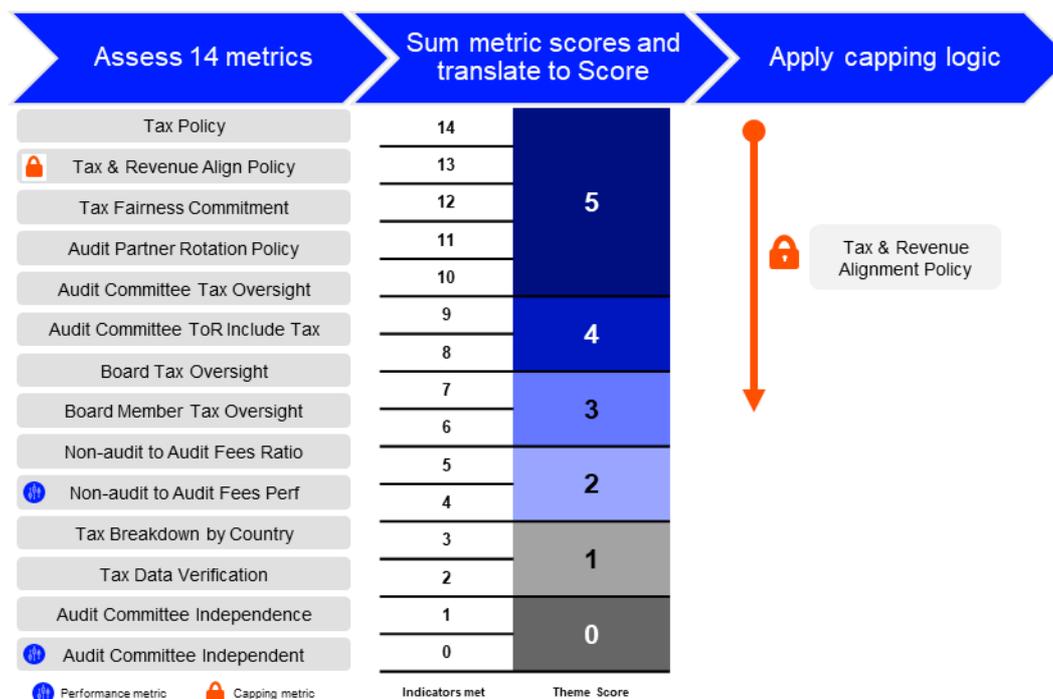


Figure 22 Tax Transparency & Accounting Theme Overview

Materiality

This Theme is assessed as Relevant for all companies given transparency around corporate finances are critical to allow stakeholders to assess corporate health and risk. Companies in IP-heavy Materiality Groups have greater ability to exploit transfer pricing and are assessed as Critical. The contribution of the Pharmaceutical industry within the Healthcare Materiality Group sees it assessed as Material, whilst the focus on this issue from the EITI²¹ sees Basic Resources assessed as Material.

Materiality Group	Tax Transparency & Accounting
Basic Resources	Material
Heavy Industry	Relevant
Manufacturing Machinery & Equipment	Relevant
Manufacturing Household Goods	Relevant
Food & Beverage	Relevant
Transport & Logistics	Relevant
Healthcare	Material
Retail & Consumer Services	Relevant
Consulting & Business Services	Critical
Media & Communications	Critical
Financial Services	Critical
Real Estate	Relevant

Table 34 Materiality groups for the Tax Transparency & Accounting theme

²¹ [Extractive Industries Transparency Initiative | EITI](#)

Theme Metrics

The following metrics are applied to companies assessed in the Tax Transparency & Accounting Theme:

Code	Title	Code	Description
Commitment	Tax Policy	TR.PolicyTaxTransparency	Does the company have a policy or commitment to tax transparency?
	Tax & Revenue Alignment Policy	TR.TaxesAligntoRevenues	Does the company commit to align tax payments with revenue-generating activity?
	Tax Fairness Commitment	TR.TaxFairnessCommitment	Does the company commit to tax fairness or to follow the spirit of the law in all countries of operation?
	Audit Partner Rotation Policy	TR.AuditRotation	Does the company commit to the regular rotation of audit partners?
Governance	Audit Committee Tax Oversight	TR.AuditOversightofTax	Does the Audit committee demonstrate oversight of corporate tax policy?
	Audit Committee Terms of Reference Include Tax	TR.TaxinAuditTor	Does the audit committee integrate responsibility for oversight of implementation of tax policy into its terms of reference (ToRs)?
	Board Tax Oversight	TR.TaxOversightbyBoard	Does the Board demonstrate that it oversees tax risks?
	Board Member Tax Oversight	TR.NamedPositionforTaxOversight	Does the company designate a named position responsible for tax at Board level?
Metrics	Non-audit to Audit Fees Ratio	TR.AnalyticNonauditAuditFeesRatio	All non-audit fees divided by the audit and audit-related fees paid to the group auditor.
	Non-audit to Audit Fees Performance	Derived from TR.AnalyticNonauditAuditFeesRatio	Companies are rewarded for a lower ratio of audit to non-audit fees relative to Materiality Group peers.
Metrics	Tax Breakdown by Country	TR.TaxBreakdownbyCountry	Does the company provide a country-by-country breakdown of its data on taxes paid?
	Tax Data Verification	TR.TaxDataVerification	Has the company's geographic breakdown of taxes paid been externally verified?
	Audit Committee Independence	TR.AnalyticAuditCommInd	Percentage of independent Board members on the audit committee as stipulated by the company.
	Audit Committee Independent	Derived from TR.AnalyticAuditCommInd	Companies are rewarded for having 100% of directors on their Audit Committee classed as independent.

Table 35 Metrics assessed in the Tax Transparency & Accounting theme and associated descriptions

Capping Metrics

A company cannot score more than a 3 in this Theme unless they meet the metric Tax & Revenue Alignment Policy.

Performance Metrics

This Theme has two performance metrics.

Non-audit to Audit Fees Performance is a relative performance metric using Non-Audit to Audit Fees Ratio. Companies are rewarded for a lower ratio of audit to non-audit fees relative to Materiality Group peers, those below the lower quartile threshold or in 10% buffer if previously rewarded. Thresholds for this metric are calculated in line with the process set out in [2.1.3](#).

Audit Committee Independent is an absolute performance metric using Audit Committee Independence. Companies are rewarded for having 100% of directors on their Audit Committee classed as independent.

LSEG ESG Score Plus

1 Overview of Plus Scores

1.1 Aim of Scores and Content

The LSEG ESG Score follows the traditional approach of using disclosed data by corporates in its methodology, to assess the operational performance and management of companies from an ESG lens. As such, 'external' information from news sources and sustainability-flagged revenue streams, for example, are not considered by the core model. The LSEG ESG Score Plus (referred to here as the *Plus Score*) aims to use these external sources and models to provide a more comprehensive assessment of the overall sustainability footprint and business model of a company.

The Plus Score additional sources help to measure both the impact a company has on the real economy and society, alongside considering additional external ESG risks to the company. These sources include deriving any sustainable products and services the company is involved in, the impact of the company's ESG-labelled debt issuance, any relevant controversial news that undermines the company's ESG standing, and a view of any sovereign ESG risks where the company operates. How the datasets are combined into a single assessment is dependent on the aims of the end-user and as such should be flexible within certain bounds, so there are three customized scores provided as part of the Plus Score package.

The Plus Score content sets are:

- Green Revenues - The proportion of company revenue aligned with sustainable or 'green' activities.
- ESG Issuance - The proportion of debt issued that's linked with sustainable activities or goals.
- ESG Controversies - Any ESG-related controversies derived from external news sources.
- Sovereign ESG Risk - A measure of Sovereign ESG Risk based on exposure to different sovereign states.

These content sets are categorised into two distinct groups: impact-based datasets highlighting ESG-linked capital related to companies, and risk-based datasets using external indicators add an additional lens on ESG risks.



Figure 23 Impact and Risk Content

The datasets are derived into individual scores. On the 'Risk' side we have the Sovereign Risk Score and the Controversies Score, and on the impact side we have the Green Revenues Score and the ESG Issuance Score. Note that we have both a score for the 'ESG Issuance' which includes a variety of ESG-linked debt instruments, and a more specific score for 'Green Issuance' which only considers green bonds, though they have the exact same methodology. This is discussed in further detail in [4](#).

The individual content set scores are processed and aggregated to form positive and negative adjustments on top of the LSEG ESG Score, in their respective Plus Score versions; the 'Risk', 'Impact' and 'Complete' Plus Scores.

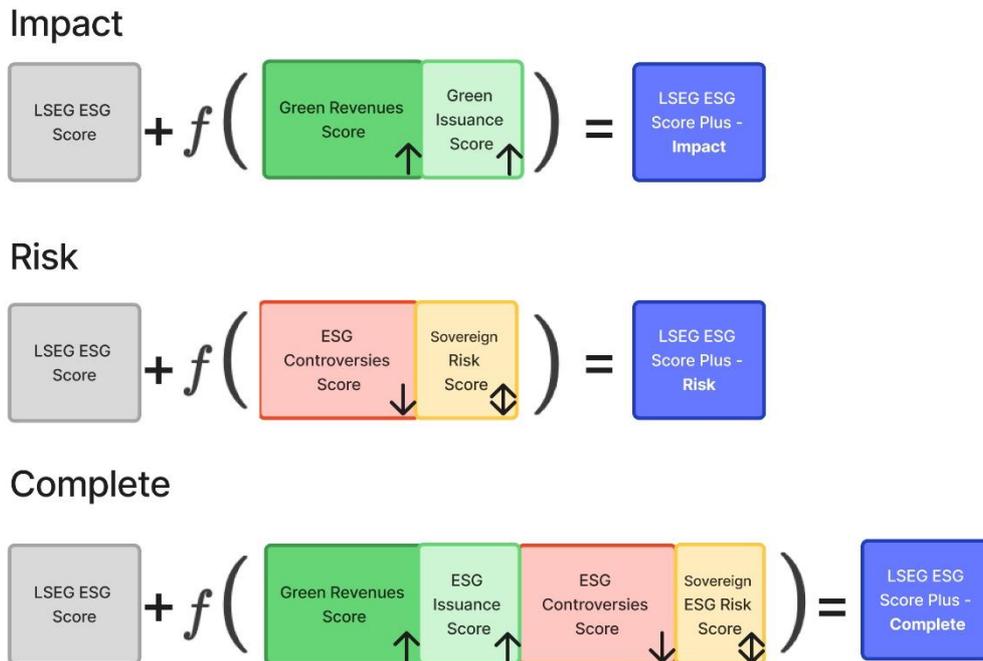


Figure 24 LSEG ESG Score Plus Calculation Overview

To form the 'Risk' version, the Controversy Score and Sovereign Risk Score are processed together to form an 'adjustment' for each company, where controversies have a negative effect, but the Sovereign Risk Score can be either positive or negative, based on comparison to the median score extracted for a control group. This adjustment is added on top of the LSEG ESG Score.

To form the 'Impact' version, the adjustment logic works the same, except instead have the Green Revenue Score and the Green Issuance Score which both provide a positive effect when forming the adjustment. The latter was chosen over ESG Issuance score because Green Bonds are a slightly more mature market with more easily verifiable targets for the 'Impact' score.

For the 'Complete' Plus Score however, we have the same adjustment methodology, but we include all scores from 'Risk' and 'Impact'. Though Green Issuance becomes 'ESG Issuance', as we also include further types of Sustainable debt.

Note that the Green Revenues Score and ESG Controversies Score have a higher weighting and thus a higher impact on the adjustment than the other two scores, as they have a closer link to a company's day-to-day activities. ESG/Green Issuance and Sovereign Risk are still important, but act as indicators with a lower weighting.

The exact combination methodology is discussed in further detail later in the document.

2 Risk Content

2.1 ESG Controversies Scores

Data and Method Description

ESG Controversies are captured from a range of news data, representing any news tagged with one of the subsets of categories described further down in this section. These are then processed into a set of scores ranging from 0 to 5 for each company, for a particular date. The aim is to highlight companies with high levels of controversies so they can be adjusted downwards, hence:

- Companies that score 0 have no controversies and the least risk
- Companies that score 5 have the largest number of controversies (relative to others) and the highest risk

First, controversial events are sourced from a variety of top editorial publications, predominantly Reuters News, but many others including Associated Press, Regulatory bodies and beyond. These events are then filtered and aligned to 10 categories that align to the OECD Guidelines for Multinational Enterprises on Responsible Business Conduct and the UNGC Principles. Controversy events in these categories represent potential violations of these initiatives. The categories are discussed in further detail in the below section.

The next step is to create specific scores for each of these categories (category scores), aggregating the number of controversies in each category for a particular company, over a 2-year look-back period, and applying a log-based transformation.

These category scores are then averaged to obtain a score across all categories for each company. To reach the final controversy scores, there's a correction for large market-capitalisation bias using a linear regression model, and then a final scaling and capping to fit the scores into the range 0 to 5.

The next few sections describe this process in greater detail.

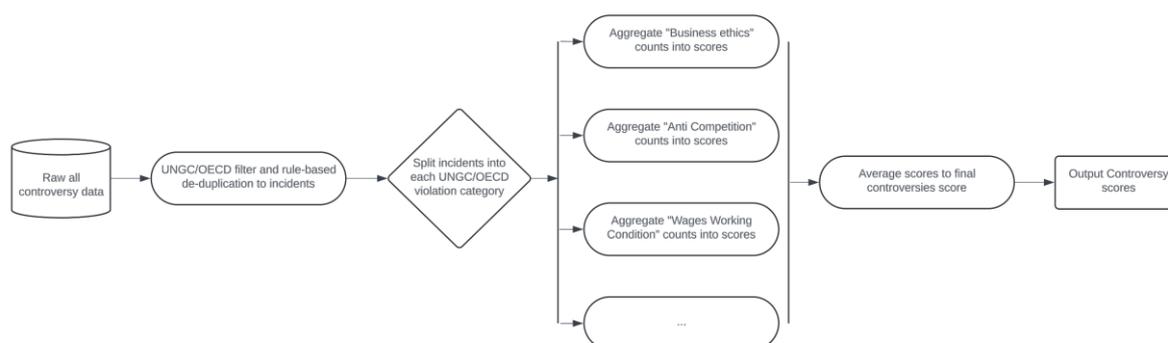


Figure 25 End to end Controversies scoring process

Stage 1. UNGC/OECD filter

We have added a screen for LSEG controversy categories before this score aggregation, to use only the 10 controversy categories associated with UN Global Compact²² (UNGC) violations and the OECD Guidelines for Multinational Enterprises on Responsible Business Conduct²³. UNGC and the OECD Guidelines are widely supported frameworks, so they can help us isolate categories that are more relevant for the purpose of this model.

The table below contains information on the categories that we include, alongside which Principles or Guidelines they relate to.

²² <https://unglobalcompact.org/what-is-gc/mission/principles>

²³ https://www.oecd.org/en/publications/oecd-guidelines-for-multinational-enterprises-on-responsible-business-conduct_81f92357-en.html

LSEG Controversy Category	UNGC Principle	OECD Guideline
Business Ethics	10	Combating Bribery and Other Forms of Corruption
Wages & Working Conditions	1,2,4	Competition
Anti-Competition	10 (indirect)	Employment and Industrial Relations
Environmental	7, 8, 9	Environment
Diversity and Opportunity	6	Employment and Industrial Relations
Public Health	1, 2	Human Rights
Human Rights	1, 2, 4	Human Rights
Employees Health & Safety	1, 2, 4	Human Rights
Freedom of Association	3	Employment and Industrial Relations
Child Labor	5	Human Rights

Table 40: Controversy categories associated with the UNGC and the OECD Guidelines

Stage 2. Split and aggregate the counts

The categories of controversies have historically had different volumes of reporting; for example, ‘Child Labor’ reports are quite infrequently occurring compared to ‘Anti-Competition’ and ‘Business Ethics’ controversies, which are the most reported. Without accounting for this, an event in a less-common category occurring has quite a low weighting in the score than events in the more common categories, but we want to increase their significance and hence we form a correction.

Each controversy category score is created by the below transformation with the parameter κ , which is category specific. It sets the (weighted) count of controversial events required to hit a maximum score of 5 in that category at the scoring date, looking back 2 years. A higher κ results in a lower change in score for each extra count recorded, and vice versa for lower κ values.

$$S_C = f(I_C, \kappa, t) = 5 \times \min\left(1, \left(\frac{\log 1 + \sum_{i=0}^N I_{Ci} w_i(t, I_{Ci})}{\log(1+\kappa)}\right)\right) \quad (5)$$

here:

$$w_i(t, I_{Ci}) = 1 - \frac{t - I_{Ci}[\text{date in days}]}{730} \quad (6)$$

and:

- S_C is the category score for category C .
- I_C represents the controversy incidents within a particular category C ; the event count is created via a weighted sum ($\sum_{i=0}^N I_{Ci} w_i(t, I_{Ci})$).
- $w_i(t)$ represents a time-weight whereby more recent controversy events are weighted higher, within a look-back period of 2 years, i.e. 730 days. For example, if an incident occurred at the start of the look-back period, the weighting is 0. Events occurring at the scoring date on the other hand, are weighed by a factor of 1, with a linear reduction in between the start of the look-back period and the scoring date.
- κ is a parameter that is specific to each category. A higher κ results in a lower change in score for each extra count recorded.
- t represents the date in days.
- $I_{Ci}[\text{date in days}]$ represents the date of incident i in days and the parameter t represents the date in days. 730 represents two years in days.

The κ values were found empirically. It is based on the mean number of controversial events in a 2-year window for each category, for the average company. We took a core set of 1000 companies, taking the mean number of controversial events in each category over the 2-year lookback period, iterating over dates from 2020-2024 (effectively considering controversies in the range 2018-2024). These empirically found values will not be changed unless significant deviations are detected.

Table 36 shows the table of κ values for each category.

Category	κ value
Anti-Competition	15.988408
Business Ethics	9.689212
Environmental	6.739791
Wages & Working Conditions	5.722976
Employees Health & Safety	3.748173
Public Health	3.432420
Diversity and Opportunity	3.178375
Freedom of Association	1.827625
Human Rights	1.332289
Child Labor	1.155821

Table 36 Empirical estimates of κ for the ten controversy categories

Stage 3: Average the category scores

For each company, calculate an equally weighted average across all controversy scores for that point in time.

$$S_a = g(S_0, S_1, \dots, S_9) = \frac{1}{10} \sum_{c=0}^9 S_c \quad (7)$$

where:

- S_a is the average category score.
- S_c is the category score for category C , from the previous step.

Step 4: Apply size bias-correction and final scaling to the overall scores

The function below describes the final controversies transformation taking place at this stage, taking in the aggregated scores from the previous step, outputting the final capped controversy scores. It involves a step to reduce the scores depending on their rolling average market capitalization

The constants in the equation are static and empirically found from looking at any present market capitalisation bias from the last few years for a representative set of companies. It is described in further detail in [Appendix 4: Controversies, Bias Correction](#).

The parameter m is the 2-year rolling average of market capitalization, calculated from monthly cap data from 2 years prior to the scoring date, up to the scoring date, taking an average across that period.

$$S_{out} = f_{cap} \left(A_1 \frac{S_a + 1}{m^{A_2}} \right) \quad (8)$$

Where:

$$f_{cap}(S) = \min(5, S) \quad (9)$$

And:

- S_a is the averaged category score from the previous step
- m is the rolling average of the market capitalization for the company over the last two years. This is done using monthly datapoints in our methodology.
- $A_1 = 1081.0472043339928$ (derived from the bias correction model)
- $A_2 = 0.21174442537085286$ (derived from the bias correction model)

The Controversy Scores and category scores are then brought down into the range of 0 to 5 to match that of all the other indicators.

2.2 Sovereign ESG Risk Score

Data and Method Description

The aim of the Sovereign ESG Risk Score is to factor-in additional ESG risks that may arise from a company's operations, based on its geographical distribution on a sovereign state level. This is derived from our internal ESG Score for sovereign states and an estimation model of companies' sovereign exposures, creating an overall score in the range [0,5].

- High scores closer to 5 indicate a low-risk company from a sovereign ESG exposure lens.
- Low scores closer to 0 indicate higher risks, with high exposure to low rating states.

Source: Sovereign ESG Scores

The ESG risk score is taken directly from the Sustainable Sovereign Risk Methodology²⁴ (SSRM), which provides ESG Scores for sovereign states. An ESG score initially proposed for evaluating sovereign debt, here it is used as a proxy for ESG risks posed by each sovereign state. The SSRM model is based on 36 environmental, social and governance indicators and covers 151 different countries. Note:

- SSRM scores are derived quarterly.
- Only countries issuing significant amounts of sovereign debt are provided scores, which covers the vast majority of the available sovereign states.
- Some states have a sovereign 'parent' and/or are not a sovereign state in their own right. Assuming the 'parent' has an SSRM score, we provide the 'child' state with the 'parent's SSRM score.

These scores will appear as per the examples shown in the [Table 37](#) (not real data nor indicative of the real data's relative values in any way):

Sovereign State	Score (/100)
US	60
China	65
Brazil	64
France	71

Table 37 Score examples for different countries

Source: Country Risk Fractions

To map companies' operational coverage to sovereign states, we use the StarMine Countries of Risk²⁵ model. It sources fractional exposures of a company to sovereign states via the company's revenue breakdown by geography, headquarters location, trading country of primary listing, and currency of filing, in that order of weighting from high to low. Note:

- Only the top 10 countries of risk are provided by the model. Sufficient to create a representative score.
- If a country's revenue by geography is reported at a less granular level than country-by-country, there is an estimation step according to the share of the region's GDP that each country makes up.
- Equally, if the currency is shared by more than one state, there's an estimation step estimating fractional exposure via each country's share of total GDP of the countries with this currency.
- For companies with subsidiaries, the subsidiary Countries of Risk output is calculated based on only information about that subsidiary.

An example of the Countries of Risk fractions, assuming the date of this data has been processed to match the SSRM scores (not real data):

Company	Sovereign State	Fractional Exposure
Company A	US	0.75
Company A	China	0.20
Company B	Brazil	0.60
Company B	France	0.20

²⁴ [Sovereign Sustainable Risk Methodology](#)

²⁵ <https://www.lseg.com/en/data-analytics/financial-data/risk-data/country-risk-data/starmine-countries-of-risk>

Table 38 Fractional exposure examples for different countries

Methodology

Firstly, take the risk fractions for each company, showing the fractional exposure to each sovereign state. These are used as a set of weights in a weighted average calculation, performing a sum of the Sovereign ESG Scores for the states present in each company's fractional exposure breakdown.

$$S_{sov} = \frac{1}{W} \left(\sum_{i=0}^n w_i x_i \right) \quad (10)$$

Where if there are 10 or more countries of risk with non-zero fractions:

$$W = \sum_{i=0}^{10} w_i \quad (11)$$

Otherwise:

$$W = 1 \quad (12)$$

Here we define:

- S_{sov} - Sovereign ESG Risk Score (output scores)
- w_i – fractional exposures of the company to each sovereign state
- x_i – sovereign state SSRM score for the country with weighting w_i

The 1/W step is necessary in case there are more than 10 countries of risk in this model, in which case the fractions would not fully sum to 1.

There is then an additional step to bridge the gap between the Sovereign ESG Risk Score produced above, and company score adjustments. We have derived the historical median.

The Sovereign Risk scores are scaled down to 0 to 5 to match that of all the other indicators (instead of 0-100).

Missing Data

If a country is present in the countries of risk for a particular company at a high fraction of risk (>0.5), and yet there is no corresponding SSRM data for this country, the country of headquarters for the company is used, along with its corresponding SSRM score.

Other countries with missing SSRM values that are not the primary country of risk (have a smaller fraction) are removed from the calculation, and the other fractions are then re-weighted to sum to 1.

Missing countries of risk data is quite rare, but the headquarters country can be used instead at a fraction of 1 in these cases.

Example

After merging the two dataset examples given above, we get (up to the top 10) countries of risk and the associated SSRM values. We then do a weighted sum of these SSRM values to arrive at the final score:

Company	Sov. 1	SSRM 1	Sov. 2	SSRM 2	Sovereign ESG Risk Score
Company A	US, 0.75	60	China, 0.30	65	$(0.75 \times 60 + 0.3 \times 65 + \dots)/20 = 63.5/20 = 3.18$
Company B	Brazil, 0.60	64	France, 0.20	71	$(0.60 \times 64 + 0.20 \times 71 + \dots)/20 = 65.8/20 = 3.29$

Table 39 Sovereign ESG risk calculation example

3 Impact Content

3.1 Green Revenues

Data Description

The aim of this dataset is to provide exposure to companies involved in the Green Economy, giving a boost to their scores to illustrate the positive environmental impact they may be contributing towards.

The Green Revenue score as part of the Plus Score, is taken from the Green Revenues 2.0 data model²⁶. It identifies companies providing green products and services and classifies associated revenues based on the Green Revenues Classification System (GRCS).²⁷ Using this data, a precise percentage of green revenues is derived at the sector, subsector and micro sector levels for each company. As such, when a company's activity is identified to have any green revenues, it is mapped to one or more micro sectors and then aggregated at the company level.

The Green Revenues Data Model is a useful tool for investors to assess portfolio exposure to climate transition risks and identify opportunities for investment in companies with green activities. It also provides a practical solution to the challenges that financial market participants face in complying with taxonomy regulatory requirements such as the EU Taxonomy Regulation.

The model has a coverage of 21,000 public companies across 49 developed and emerging markets.

Estimation Process

As data isn't necessarily available or reported, further research is required to break down the revenues associated with each business segment to obtain revenues associated with each green micro sector and to establish their share in the company's overall revenues. LSEG achieves this through:

- a. Direct company engagement. All identified companies are engaged directly by LSEG to verify the green revenue assessment and, where required, are asked to confirm the breakdown of revenues by green activity and the overall green revenue. Guidance documents are provided during company engagement, so companies may better respond with related information within a two-week timeframe.
- b. Company-specific estimates. Where companies provide limited revenue disclosures and do not respond to the request for disclosure, analysts will identify additional data, such as non-revenue data (e.g. production volumes) or relevant market or peer data (such as market share of a product) that can form a reasonable basis for estimating revenues from each green micro sector.

See further details in the GRCS research document²⁸.

Aggregation into a Score

The LSEG ESG Scores Plus use the estimated green revenues from the described model above. The raw percentage ranges from 0 to 100, and is based on one datapoint per fiscal year. It is derived into the Green Revenue Score by a simple 1/20 scaling to fit it with the other scores, into the range [0,5]. Companies with no green revenues will receive a score of 0, while a score of 5 indicates all revenue is derived from green sources.

Missing data

Companies not covered in this model (without a Green Revenues datapoint) receive a Green Revenue Score 0.

4 Green or Other ESG Issuance Scores

Data Description

The Green Issuance Score attempts to add a view of how much of a company's debt is made up of sustainability-related instruments. Companies with higher proportions of their debt labelled as sustainable, will receive a bonus in the score. The idea is that these companies are committing capital either to make their business more sustainable, or for certain sustainable projects.

Green Issuance refers to the sustainable capital raising of a company using a variety of debt instruments. The sustainable types of instruments are grouped below:

Bond Type	Description	In 'Impact' Version?	In 'Complete' Version?
'CBI Certified' Green Bonds	Bonds that meet the Climate Bonds Standard (CBS) ²⁹ , the most stringent green bonds certifications, making these bonds the most reliably 'green'. The issuer is required to seek certification from the Climate Bond Initiative (CBI).	Y	Y

²⁶ [Green Revenues 2.0 Data Model | LSEG | FTSE Russell](#)

²⁷ [Green Revenues Classification System](#)

²⁸ Green Revenues 2.0 model methodology: <https://thesource.lseg.com/thesource/asset?id=45381>

²⁹ <https://www.climatebonds.net/our-expertise/standard-sector-criteria-certification/the-standard>

Bond Type	Description	In 'Impact' Version?	In 'Complete' Version?
'CBI Aligned' Green Bonds	These bonds have Use-of-Proceeds that are considered aligned (via CBI screening) to the Climate Bonds Taxonomy. A bond labelled 'CBI Aligned' meets the alignment criteria but not the 'CBI Certified' criteria.	Y	Y
Self-Labelled Green Bonds	All other green Use-of-Proceeds bonds (e.g. can be aligned to ICMA standards ³⁰ , or otherwise).	Y	Y
Social bonds	Capital raised for projects that will improve social issues or have positive outcomes socially. ³¹	N	Y
Sustainability Bonds	Capital raised for projects that will be for a combination of green and social outcomes. ³²	N	Y
Sustainability-Linked Bonds (SLBs)	Capital raised is not use-of-proceeds based but linked to key performance indicators (KPIs) that the issuer aims to hit, which can be in any realm of ESG. Failure to hit these targets often results in a financial penalty. See the ICMA Sustainability-Linked Bond Principles ³³ .	N	Y

Table 40 Sustainable types of instruments, associated descriptions and classification in the LSEG ESG Score Plus. Green bonds data also include subsidiary level data.

Alongside green bonds, there's a view of the entire debt issued for each company as of the scoring date, considering a variety of fixed income instruments.

The last columns describe which flavours of the Plus Score each type is present in. The 'Impact' version and the 'Complete' version are discussed later in this document, but broadly the Complete score has a view taking in all sustainable debt types, and the Impact version is only based on the Green Bond-flagged types.

Methodology

The total outstanding amount for both all debt and sustainable debt only, are calculated. This considers all currently outstanding fixed income instruments issued by the company as of the scoring date, alongside the necessary currency conversions to perform all the calculations in USD. As part of this total, there is a subset of bonds/fixed income instruments that are tagged as green or sustainability bonds, shown in the table above. We use the relevant subset depending on which score is being calculated (different in Impact and Complete versions), to create the total outstanding sustainable debt.

The constants in the below equation were chosen empirically to create a reasonable distribution.

$$G_{iss} = \min \left(1, \frac{\log \left(1 + 10 \frac{\sum_i GB_i}{\sum_j B_j} \right)}{\log(4.1)} \right) \quad (13)$$

Where:

- $\sum_i GB_i$ = Sum of outstanding amounts green and sustainable bonds or debt for the relevant score
- $\sum_j B_j$ = Sum of outstanding amounts for all bonds or debt

The green issuance scores are then scaled to 0 to 5 to match that of all the other indicators (instead of 0 to 100).

Missing And Attributing Data

Any companies with no debt, are treated as having 0% green issuance. Furthermore, we aggregate any debt issued by subsidiaries as part of the parent's totals. Subsidiary structures vary significantly so we believe this is the best way to treat debt across all companies, in order to capture all green debt. This green debt is then contextualised by the total 'non-green' debt so this should provide a comprehensive view of a company's green debt commitment.

³⁰ <https://www.icmagroup.org/assets/documents/Sustainable-finance/2025-updates/Green-Bond-Principles-GBP-June-2025.pdf>

³¹ <https://www.icmagroup.org/assets/documents/Sustainable-finance/2025-updates/Social-Bond-Principles-SBP-June-2025.pdf>

³² <https://www.icmagroup.org/assets/documents/Sustainable-finance/2021-updates/Sustainability-Bond-Guidelines-June-2021-140621.pdf>

³³ <https://www.icmagroup.org/assets/documents/Sustainable-finance/2023-updates/Sustainability-Linked-Bond-Principles-June-2023-220623.pdf>

5 Overall Plus Score Calculation

5.1 Score Calculation Equation

Due to the Risk/Impact categorisation, we've split the scores to accommodate different types of users with slightly different materiality considerations or preferences. There are 'Risk' and 'Impact' versions of the Plus Score incorporating respective subsets of the content, alongside the 'Complete' version with all content considered.

The below equation summarizes the process for creating each of the Plus scores, using the core LSEG ESG Score, adding some scaled adjustments from the Plus content sets, then capping the scores to the range of 0 to 5. The only part that differs between the Risk, Impact and Complete scores is ΔS .

$$S_{Plus} = f_{cap}(S_{LSEG\ ESG\ Score} + f_{scale}(\Delta S, S_{LSEG\ ESG\ Score})) \quad (14)$$

Where:

- f_{cap} = Function to set the minimum score as 0 and the maximum score as 5.
- $S_{LSEG\ ESG\ Score}$ = LSEG ESG Score.
- ΔS – Adjustments created by the Plus content sets. Specific to Impact, Risk and Complete versions.
- f_{scale} = scaling factor function, taking the Plus adjustments and the core LSEG ESG Score and ensuring the adjustments are not too high or low. See below sections for details.

Note all the scores should be in the range 0 to 5.

5.2 Adjustments Combination

The adjustment relevant to each variant of the Plus Score (ΔS) changes according to which datasets are considered.

5.2.1 Impact Version – Adjustments

The Impact dimension uses both the green revenues and green issuance adjustment. Its aim is to focus more on datasets that show capital is going towards 'green' activities and to provide the necessary upwards adjustments if there is evidence of this. Both of these adjustments are directly the Green Revenue Score and Green Issuance Score, added using weights discussed later in this document.

$$\Delta S = \alpha A_{GR} + \beta A_{GI} \quad (15)$$

Where:

α, β = weights (in the range 0 to 1) for the sum of the impact adjustments.

A_{GR} = Green Revenue Score

A_{GI} = Green Issuance Score (just using the green bond-related categories, not all the ESG-related bonds)

5.2.2 Risk Version – Adjustments

The Risk dimension uses both the controversies and sovereign risk adjustment. The aim is to use the Controversy Score to provide penalties to the ESG Score of any companies exhibiting high amounts of controversial events from the news, hence the negative weight in equation 16 below. The sovereign risk part on the other hand, provides an insight as to whether the company has a higher or lower risk than average from the countries that it operates in, based on sovereign ESG indicators. The sovereign risk component in the equation below is therefore the median-adjusted version of the Sovereign Risk Score (subtract the median Sovereign ESG from the score, so there are positive and negative values). Its weight will be positive.

$$\Delta S = -\gamma A_{Con} + \delta A_{Sov} \quad (16)$$

Where:

γ, δ = weights (in the range 0-1) for the sum of the impact adjustments.

A_{Con} = ESG Controversy Score

A_{Sov} = Sovereign ESG Risk Score, adjusted by subtracting the median

The median Sovereign ESG Risk Score is calculated via an initial set of 1000 companies from 2020 to 2024, where it was found to be 3.1205. This will remain constant and will be monitored for any significant changes based on new data.

5.2.3 Complete Version - Adjustments

The Complete dimension uses a combination of green revenues, green issuance, controversies and sovereign risk.

$$\Delta S = \alpha A_{GR} + \beta A_{GI} - \gamma A_{Con} + \delta A_{Sov} \quad (17)$$

Where variables are described are as in the above sections.

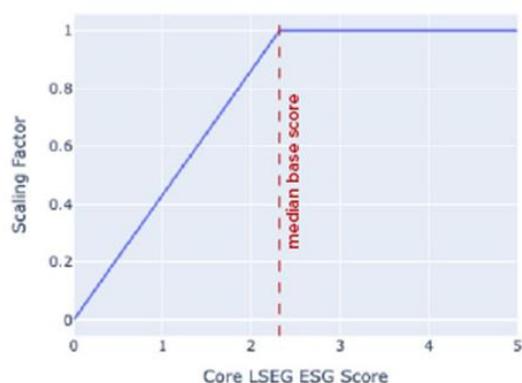
5.3 Scaling the Adjustments

Following the adjustment process from the above Plus Score content sets, a final set of scaling is applied in f_{scale} which scales the ΔS only but depends on the underlying core (LSEG ESG Score) value. This is to keep scores within the range [0,5], and to account for companies with high scores or low scores already.

An already-high scoring company with the core LSEG ESG score, with additional points from the Plus content, does not provide as much additional information about the company as if it was a low scoring company initially with a high bonus. There are diminishing returns for confirming that a company scoring highly in the LSEG ESG Score also has Plus Score bonuses. Vice versa for low scoring companies and Plus Score deductions. Hence, we reduce the total change in score if they have already low base scores and have a net negative adjustment or have a high base score and have a net positive Plus adjustment. Specifically:

If total adjustment (from the Plus Score content) is negative and the core LSEG ESG Score is below the median, apply a scaling of <1 to reduce the deduction of points. If total adjustment is positive and core LSEG ESG Score is above the median, also apply a scaling to reduce the addition of points.

Scaling Factor for Negative Total Adjustments



Scaling Factor for Positive Total Adjustments

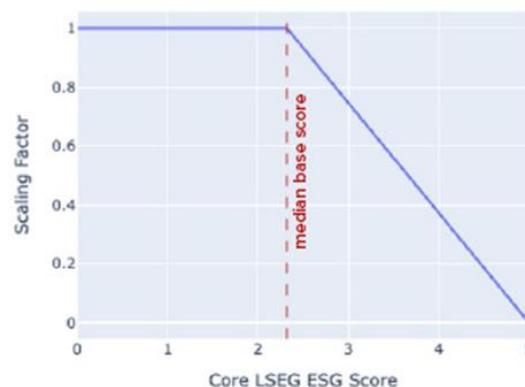


Figure 26 Scaling Factors

f_{scale} produces the scaling factor which ranges from (0,1), which is then multiplied by ΔS to find the scaled adjustment for Plus. This is then to be summed with the Core LSEG ESG Score.

Median was chosen as 2.343066 using the core LSEG ESG Scores over a subset of companies from 2020-2024. This median will be used consistently as a static parameter.

5.4 Weightings Assessment

In the previous equations for the adjustments produced in the Plus Scores, the various weightings ($\alpha, \beta, \gamma, \delta$) are used to describe the relative importance of each dataset. The weightings are slightly different for each variant of the Plus Scores.

5.4.1 Research Ethos

For all the scores, the weighting research considered the performance of companies across sectors, different market capitalization categories, and developed vs emerging markets. The aim was, for any bias present in the ESG scores according to these views, to either reduce this bias or keep the level relatively consistent. We also considered correlations between datasets but found no significant effect.

For the impact scores, we have designed weights that result in companies with higher adjustments generally being bigger ‘improvers’ in terms of their LSEG ESG Score, implying their ESG score may be a proxy for their impact, though these methods are quite broad.

The main principles driving our weight selection though, is that the Green Revenues and Controversies datasets have higher average adjustments than the Green Issuance and Sovereign Risk datasets³⁴. The theory of this is that Green Revenues shows direct participation in the green economy and thus shows that a company’s main business activities can be recognised for their sustainable contribution, while Controversies shows direct evidence of previous negative ESG-events; these are both closely related to a company’s business activities. Green Issuance on the other hand provides some bonus points, but the finance raised from sustainable debt instruments is not necessarily their main business activity, and Sovereign Risk mostly highlights the effect of external ESG risks on the company. These datasets therefore still provide value, but they are placed with a lower weighting.

5.5 Table of Weights

The below weights show the distribution of adjustment weights for the ΔS equation across the three variants of the Plus Score.

Variant	Green Revenues Weight (α)	Green Issuance Weight (β)	Controversies Weight (γ)	Sovereign Risk Weight (δ)
Risk	0	0	0.476	0.337
Impact	0.4	0.1	0	0
Complete	0.4	0.1	0.476	0.337

Table 41 Table of parameter weights from the LSEG ESG Score Plus and sub-components

³⁴ Sovereign Risk’s weight looks high, but in reality, the median adjustment keeps its contribution to the average Plus Score adjustment to be quite low.

Data collection process

1. Data collection and inputs for the ESG Scores

LSEG collects and calculates over 870 company-level ESG measures, of which a subset of 221 are used to drive the ESG scoring process. These indicators have been chosen to provide a comprehensive overview of a company's internal operations from an ESG perspective, while also being comparable and material per industry (details in the ESG glossary, available on request). Data for the model is obtained from corporate reports such as Annual or Integrated Reporting, specific Corporate Sustainability Reports, press releases, corporate websites and CDP (Carbon Disclosure Project) data. Estimated data or non-public information is not used in the ESG Scores.

For the LSEG ESG Scores Plus model, data sources are related to green bond issuance by companies, revenues generated from green activities, sovereign ESG risk exposure for companies, as well as news controversies.

2. Data coverage

ESG data is available for 16,000 public and private companies. ESG scores and metrics are available for circa 14,000 public entities with time series data from fiscal year 2022. ESG metrics are available for 1,300 private companies globally. These are distributed globally with North America (5900+), Latin America (500+), Europe (3,700), Africa & Middle East (650+), Asia inc. Japan (3600+), Oceania (700+). The ESG Scores are calculated and available for all public companies starting from 2022 in the global ESG coverage. A regional breakdown of coverage is provided in [Figure 27 Regional breakdown of data coverage in the ESG universe](#).

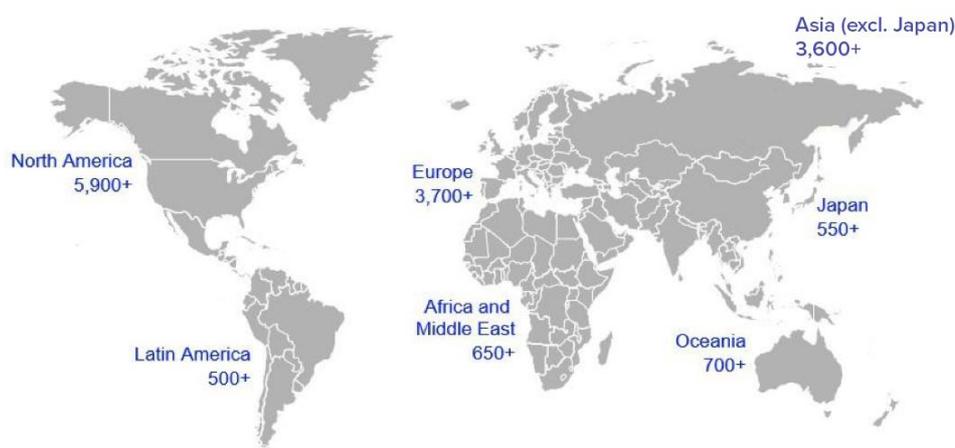


Figure 27 Regional breakdown of data coverage in the ESG universe

As ESG information demand has grown for various stakeholders in the financial markets, in particular some index investors, our coverage has evolved over time and is continuously expanding, including via the inclusion of more indices. We review the constituents of these indices on a quarterly basis when additional companies are also included in our coverage. The timeline in the illustration breaks down the various indices' which form part of our ESG universe and when coverage commenced for them.

3. Communication with Assessed Entities

LSEG D&A facilitates corporate engagement through the **LSEG Contributions Channel** — a free, self-service platform that enables corporates to:

- Review data collected by LSEG
- Submit additional information
- Request updates or corrections to existing data

LSEG ESG Core and Plus scores will be presented within the LSEG Contributions channel for Corporates to access. This capability will evolve over time to offer the following:

- The ability to identify and filter the specific metrics used in calculating LSEG Core & Plus ESG scores

- Advance notifications to companies newly added to our ESG/Climate universe before their scores are published
- Bulk communication capabilities to notify all companies of any changes to our ESG/Climate methodology

The Contributions Channel provides year-round engagement opportunities with LSEG. Corporates are supported by a dedicated team of Data Specialists, along with comprehensive resources such as user guides, FAQs, and methodology documentation. Corporates can submit data queries directly through the Contributions Channel.

Model management

1 Model output validation

Data quality is a cornerstone of effective model management, as it directly impacts both the accuracy and reliability of insights derived from models. High quality input data, whether qualitative or quantitative, ensures the model captures a true representation of the companies' performance and management quality, while clean and accurate output data facilitates better informed decision-making. The temporal dimension is equally critical – hence, data quality is assessed not only at the time of collection, but throughout the model lifecycle, accounting for changes in relevance, accuracy and consistency over time. By maintaining rigorous standards for data quality across these dimensions, we ensure that the models are both robust and adapted to evolving conditions. Quality controls are run daily, and all discrepancies are treated in a hierarchical manner. Daily communication occurs among internal teams throughout the quality assurance process to ensure that all exceptions and quality controls that are raised are treated adequately prior to score publication, thereby ensuring a high level of data quality.

2 Data limitations

2.1 Data revision process

The nature of the data is dynamic as companies regularly revise their disclosures as new information becomes available. Accordingly, the database is continuously updated in alignment with corporate reporting cycles. Data on products is refreshed weekly, including the calculation of LSEG ESG scores.

Updates may include new companies being added to the database or the integration of latest updates from companies' annual reports. Once collected, data updates are properly systemically incorporated in the central database and the system is refreshed to reflect the latest available data. Throughout this entire process, ESG scores are continuously recalculated to ensure they reflect the most recent inputs. LSEG ESG Scores (including Plus) are calculated using a four-year lookback period. This means that each company within the ESG universe will have its score calculated weekly for each of the four most recent fiscal years where input data has changed. Additionally, previously calculated scores are retained for the past five years to support data storage, tracability and historical analysis.

2.2 Complete vs. Indicative Scores and Time Horizon

Corporate-reported data is updated and revised regularly as new information becomes available for any given company across fiscal years. As data is collected and quality controlled, weekly updates are reflected accordingly into the system. Once a company has finalized its annual data disclosures and the data has been processed by our teams, the ESG score for this fiscal year is marked as **complete score** in the system. As this cycle progresses, ESG scores are recalculated on a regular basis to reflect the latest data, ensuring the output remains accurate and up to date. To adequately reflect underlying data changes and updates in the ESG scores, these are calculated and published using a four-year lookback period, which means each score delivery includes results for four fiscal years.

Complete assessments are done at a single financial year level and flagged in this sense, with a small number of performance metrics looking back to previous financial years (e.g. the fatalities performance metric). **Indicative scores** use a blend of this and the previous year's disclosures – for example the score for FY0 will use data from both FY0 and FY-1, when no FY0 data exists for some indicators. Therefore, for any given fiscal year, if a company has only partially reported its data and has not been marked as complete in the system, the model applies a lookback mechanism. In such cases, data from the previous complete fiscal year is used to fill the gaps, ensuring continuity in scoring. The resulting ESG score for that fiscal year is considered **indicative**, reflecting the provisional nature of the underlying data for that fiscal year. Indicative scores are calculated when data collection analysts expect further documents for the fiscal year to be published by the company which could lead to a change in the score. This collection period for a given company can last up to 18 months after the end date of the fiscal year. Conversely, when a company is marked as complete, the corresponding score is treated as **complete** and fully representative of the company's performance for that fiscal year. Complete scores are calculated once data collection analysts expect no further documents to be published relating to the fiscal year or if the 18 months period after the start of the fiscal year has passed. Indicative or complete scores will be marked in the system through a flag "Indicative Score".

3 Quality controls

3.1 Input Data Quality Control

The following data validation requirements will be assessed for the data that goes into the ESG scoring model:

No	Check	Details	Example
1	Database not filled	Data for a given company does not exist in the database for the current and previous FY.	Expected filled-in vs. not expected filled-in. To check
2	Indicative scores	Check if companies report more than two indicative fiscal years. There might be cases where two consecutive Indicative = TRUE fiscal years are expected	Expected: latest fiscal year can contain indicative data, while previous fiscal years should have complete data, with exceptions, to be determined on a case by case basis.
3	Boolean consistency	Boolean data is not consistent between periods. Any change of Boolean data in a time-series is considered an inconsistency.	[1, 1]: OK [0, 0]: OK [1, 0]: Error, check [0, 1]: Error, check
4	Missing data current period	Missing data for the current fiscal year, where values are available at previous run dates.	FY(-1): data is present FY(0): data is missing
5	Missing data across periods	Missing data across periods i.e. there is missing data across historical periods looking back five years. Example for quantitative: 50, 73, [], 44, 65. Example for qualitative: 1, 1, [], 1, 1 (here, [] denotes the missing data). Difference: missing but consistent (missing vs. inconsistent from point 1 above). QCs from both points 2 and 3 should be checked together if they exist.	Numerical: [50, 73, [], 44, 65] Boolean: [1, 1, [], 1, 1]: error [1, 1, [], 0, 1]: error + error from point 2 above
6	Relative changes (delta %)	Calculate relative change of value for a given indicator between across fiscal years. Flag companies/indicators for which this value surpasses a pre-determined threshold (threshold and list of non-numerical indicators) based on a traffic light approach. Relative change values: $\Delta\%X_{t/(t-1)} = \frac{X_t - X_{t-1}}{X_{t-1}} \times 100$ where X_t represents the numerical non-Boolean or non-year (i.e. integer, percentage, float) value for a given indicator at time-period (slice) t .	Indicator A $\Delta\%$ = 2% Indicator B $\Delta\%$ = 15% Indicator C $\Delta\%$ = 70% Indicator D $\Delta\%$ = 125%

Table 42 List of input data quality control checks

3.2 Output Scores Quality Control

No	QC check	Details	Example
1	z-Scoring	<p>For each company i, calculate z-scores of both absolute levels of scores and of relative changes of scores.</p> $z_i = \frac{x_i - \mu}{\sigma}$ <p>Where:</p> <p>z_i represents the z-score for company i of either absolute level score OR relative change of score between two given dates</p> <p>x_i represents either the absolute ESG score for company i OR the relative change of the ESG score between two given dates</p> <p>μ represents the average of either scores or relative changes at a TRBC group level</p> <p>σ represents the standard deviation of the either scores or relative changes at a TRBC group level</p>	Check outlier z-scores at a TRBC group level.
2	Anomaly detection	Determine current run vs previous run outliers and consecutive years outliers using different ML algorithms	Check outlier companies at TRBC group level.

Table 43 List of output data quality control checks

3.3 Expert judgment

In the QC process, statistical and ML methods are used to determine both output and input outliers and ensure that data is of high quality in the scoring process. However, expert judgment will be used by expert analysts in determining the final list of outliers based on several criteria, including: (i) overlap of results from z-Scoring extremes and anomaly detection, (ii) thresholding, (iii) indicator importance and (iv) size of company.

4 Challenge and appeal process

LSEG clients can raise questions about our ESG data and scores via the link below. Environmental, Social & Governance scores from LSEG are refreshed weekly and any changes applied because of client feedback will be factored into this cycle.

Product and Content Support: [Product and Content Support | MyAccount](#)

5 Methodology review process

The relevance and suitability of our ESG scoring methodology is reviewed annually to ensure its effectiveness and alignment with the evolving needs of clients, disclosures and the industry. However, changes to our scoring methodology are implemented cautiously and infrequently, with the aim of maintaining stability and minimizing disruption to the users of the data. This approach is adopted to maintain consistency, allow for accurate trend analysis and to preserve confidence in the scoring model among LSEG customers. Should any iterations be required to the ESG scoring methodology, we follow a systematic process before releasing. This ensures enhancements are implemented in a thoughtful and responsible manner. As new regulations are introduced and reporting standards evolve, the data metrics and methodology used for scoring is periodically evaluated to ensure its relevance and accuracy. Similarly, when new logic is developed, or existing logic modified, impact analysis is performed to understand the potential effects on the scoring system and its outputs. This analysis helps in identifying any potential limitations, biases, or unintended consequences that may arise from the changes. Processes (including oversight) changes, enhancements, and impact analyses are thoroughly documented to maintain transparency and accountability.

6 Management of conflicts of interest

LSEG has processes in place to identify, assess and manage potential conflicts of interest (COI). Any conflicts of interest are recorded in a conflicts of interest register and reviewed periodically in line with our governance framework. Conflicts of interest may arise in areas including:

- organizational ownership;
- product design and management;
- clients, partners or suppliers;
- individual employees/directors.

These COI management processes are subject to review by the LSEG D&A SRGC on an annual basis, or more frequently if the possibility of a conflict arises. Following a conflict being identified, management and Compliance assess the nature of the conflict and determine what controls may be put in place to manage the conflict adequately, and any disclosure that may be required. In the event that satisfactory controls cannot be established, the activity will be declined or discontinued. The range of mitigating processes, controls and governance put in place to manage the potential conflicts identified as part of the framework, aims to remove any residual material conflicts.

7 Further information on the ESG Model

Further information on the ESG methodology, data sources and company real-time results can be found on the official LSEG website under www.lseg.com

Appendix 1: Materiality Matrix Accessible Version

Materiality Groups mapping to the Themes and different materiality levels. Further detail in [2.3](#).

Table 44 Materiality Group mapping to ESG Themes Accessible version

Materiality Group	1 Climate transition					2 Labour relations			3 Board & management			
	1 Energy & resource use	1 Biodiversity	1 Water use	1 Waste & pollution	2 Labour relations	2 Health & safety	2 Human rights & community	3 Board & management	3 Shareholder rights	3 Conduct & anti-corruption	3 Tax transparency & accounting	
Basic resources	Critical	Relevant	Material	Material	Material	Relevant	Material	Material	Material	Material	Critical	Material
Heavy industry	Critical	Material	Relevant	Material	Critical	Relevant	Material	Material	Material	Material	Material	Relevant
Manufacturing machinery & heavy equipment	Material	Critical	Relevant	Relevant	Critical	Material	Material	Relevant	Material	Material	Relevant	Relevant
Manufacturing household goods	Material	Critical	Relevant	Relevant	Material	Critical	Material	Relevant	Material	Material	Relevant	Relevant
Food & beverage	Material	Critical	Material	Critical	Relevant	Material	Material	Relevant	Material	Material	Relevant	Relevant
Transport & logistics	Critical	Material	Relevant	Relevant	Material	Material	Critical	Relevant	Material	Material	Material	Relevant
Healthcare	Material	Relevant	Relevant	Relevant	Material	Material	Material	Relevant	Material	Material	Critical	Material
Retail & consumer services	Material	Relevant	Relevant	Relevant	Material	Critical	Material	Relevant	Material	Material	Relevant	Relevant
Consulting & business services	Material	Relevant	Not Relevant	Not Relevant	Not Relevant	Material	Not Relevant	Relevant	Material	Material	Material	Critical
Media & communication	Material	Relevant	Not Relevant	Not Relevant	Not Relevant	Relevant	Not Relevant	Relevant	Material	Material	Relevant	Critical
Financial services	Material	Relevant	Not Relevant	Not Relevant	Not Relevant	Relevant	Not Relevant	Relevant	Material	Material	Critical	Critical
Real estate	Critical	Material	Relevant	Material	Relevant	Relevant	Relevant	Relevant	Material	Material	Material	Relevant

Table 45 Theme Grouping, Environmental, Social or Governance for Materiality Group

Number	Theme Type
1	Environmental Theme
2	Social Theme
3	Governance Theme

Appendix 2: Minimum indicators required for each Theme

Accessible version

Table 46 Accessible table of Minimum number of indicators needed to meet a given score for each Theme

Theme	Score 1	Score 2	Score 3	Score 4	Score 5
Biodiversity	1	2	3	4	6
Board & Management	8	10	13	15	17
Energy & Resource Use	2	4	6	8	10
Health & Safety	2	4	6	8	11
Human Rights & Community	1	3	6	8	11
Labour Relations	4	8	12	15	19
Conduct & Anti-Corruption	4	7	10	13	15
Shareholders	7	9	10	11	13
Tax Transparency & Accounting	2	4	6	8	10
Waste & Pollution	3	6	9	11	15
Water Use	1	3	5	7	9

Appendix 3: Materiality Group to TRBC

Materiality Group	Intermediate Materiality Group	Economic Sector	Business Sector	Industry Group	Industry	TRBC Code
Basic Resources	Forestry	Basic Materials	Applied Resources	Paper & Forest Products	Forest & Wood Products	51301010
Basic Resources	Fossil fuel production	Energy	Energy - Fossil Fuels	Coal	Coal	50101010
Basic Resources	Fossil fuel production	Energy	Energy - Fossil Fuels	Oil & Gas	Integrated Oil & Gas	50102010
Basic Resources	Fossil fuel production	Energy	Energy - Fossil Fuels	Oil & Gas	Oil & Gas Exploration and Production	50102020
Basic Resources	Fossil fuel production	Energy	Energy - Fossil Fuels	Oil & Gas	Oil & Gas Refining and Marketing	50102030
Basic Resources	Fossil fuel production	Energy	Energy - Fossil Fuels	Oil & Gas Related Equipment and Services	Oil & Gas Drilling	50103010
Basic Resources	Fossil fuel production	Energy	Energy - Fossil Fuels	Oil & Gas Related Equipment and Services	Oil Related Services and Equipment	50103020
Basic Resources	Fossil fuel production	Energy	Energy - Fossil Fuels	Oil & Gas Related Equipment and Services	Oil & Gas Transportation Services	50103030
Basic Resources	Metals & Mining	Energy	Uranium	Uranium	Uranium	50301010
Basic Resources	Metals & Mining	Basic Materials	Mineral Resources	Metals & Mining	Non-Gold Precious Metals & Minerals	51201010
Basic Resources	Metals & Mining	Basic Materials	Mineral Resources	Metals & Mining	Iron & Steel	51201020
Basic Resources	Metals & Mining	Basic Materials	Mineral Resources	Metals & Mining	Aluminum	51201030
Basic Resources	Metals & Mining	Basic Materials	Mineral Resources	Metals & Mining	Specialty Mining & Metals	51201050

Materiality Group	Intermediate Materiality Group	Economic Sector	Business Sector	Industry Group	Industry	TRBC Code
Basic Resources	Metals & Mining	Basic Materials	Mineral Resources	Metals & Mining	Gold	51201060
Basic Resources	Metals & Mining	Basic Materials	Mineral Resources	Metals & Mining	Mining Support Services & Equipment	51201070
Basic Resources	Metals & Mining	Basic Materials	Mineral Resources	Metals & Mining	Diversified Mining	51201080
Consulting & Business Services	Consulting and business services	Industrials	Industrial & Commercial Services	Professional & Commercial Services	Employment Services	52203030
Consulting & Business Services	Consulting and business services	Industrials	Industrial & Commercial Services	Professional & Commercial Services	Business Support Services	52203040
Consulting & Business Services	Consulting and business services	Technology	Software & IT Services	Software & IT Services	IT Services & Consulting	57201010
Consulting & Business Services	Consulting and business services	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Professional Organizations	61101050
Consulting & Business Services	Consulting and business services	Government Activity	Government Activity	Government Activity	Government & Government Finance	62101010
Consulting & Business Services	Consulting and business services	Government Activity	Government Activity	Government Activity	Legal & Safety Public Services	62101020
Consulting & Business Services	Consulting and business services	Government Activity	Government Activity	Government Activity	Government Administration Activities	62101030
Consulting & Business Services	Consulting and business services	Government Activity	Government Activity	Government Activity	National Security & International Affairs	62101040
Consulting & Business Services	Software	Technology	Software & IT Services	Software & IT Services	Software	57201020
Consumer Services & Retail	Consumer services	Consumer Cyclical	Retailers	Specialty Retailers	Auto Vehicles, Parts & Service Retailers	53403010
Consumer Services & Retail	Consumer services	Consumer Non-Cyclical	Personal & Household Products & Services	Personal & Household Products & Services	Personal Services	54201030
Consumer Services & Retail	Consumer services	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Religious Organizations	61101010
Consumer Services & Retail	Consumer services	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Civic & Social Organizations	61101020
Consumer Services & Retail	Consumer services	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Environmental Organizations	61101030
Consumer Services & Retail	Consumer services	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Charity Organizations	61101040
Consumer Services & Retail	Consumer services	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Miscellaneous Educational Service Providers	63101010
Consumer Services & Retail	Consumer services	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Schools, Colleges & Universities	63102010
Consumer Services & Retail	Consumer services	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Institutions, Associations & Organizations	Professional & Business Education	63103010

Materiality Group	Intermediate Materiality Group	Economic Sector	Business Sector	Industry Group	Industry	TRBC Code
Consumer Services & Retail	Leisure providers	Consumer Cyclical	Cyclical Consumer Services	Hotels & Entertainment Services	Hotels, Motels & Cruise Lines	53301010
Consumer Services & Retail	Leisure providers	Consumer Cyclical	Cyclical Consumer Services	Hotels & Entertainment Services	Restaurants & Bars	53301020
Consumer Services & Retail	Leisure providers	Consumer Cyclical	Cyclical Consumer Services	Hotels & Entertainment Services	Casinos & Gaming	53301030
Consumer Services & Retail	Leisure providers	Consumer Cyclical	Cyclical Consumer Services	Hotels & Entertainment Services	Leisure & Recreation	53301040
Consumer Services & Retail	Retailers	Consumer Cyclical	Retailers	Diversified Retail	Department Stores	53402010
Consumer Services & Retail	Retailers	Consumer Cyclical	Retailers	Diversified Retail	Discount Stores	53402020
Consumer Services & Retail	Retailers	Consumer Cyclical	Retailers	Specialty Retailers	Home Improvement Products & Services Retailers	53403020
Consumer Services & Retail	Retailers	Consumer Cyclical	Retailers	Specialty Retailers	Home Furnishings Retailers	53403030
Consumer Services & Retail	Retailers	Consumer Cyclical	Retailers	Specialty Retailers	Apparel & Accessories Retailers	53403040
Consumer Services & Retail	Retailers	Consumer Cyclical	Retailers	Specialty Retailers	Computer & Electronics Retailers	53403050
Consumer Services & Retail	Retailers	Consumer Cyclical	Retailers	Specialty Retailers	Miscellaneous Specialty Retailers	53403090
Consumer Services & Retail	Retailers	Consumer Non-Cyclical	Food & Drug Retailing	Food & Drug Retailing	Drug Retailers	54301010
Financial Services	Banks	Financials	Banking & Investment Services	Banking Services	Banks	55101010
Financial Services	Banks	Financials	Banking & Investment Services	Banking Services	Consumer Lending	55101030
Financial Services	Banks	Financials	Banking & Investment Services	Banking Services	Corporate Financial Services	55101050
Financial Services	Banks	Financials	Banking & Investment Services	Investment Banking & Investment Services	Investment Banking & Brokerage Services	55102010
Financial Services	Financial Services	Industrials	Industrial & Commercial Services	Professional & Commercial Services	Professional Information Services	52203070
Financial Services	Financial Services	Financials	Banking & Investment Services	Investment Banking & Investment Services	Investment Management & Fund Operators	55102020
Financial Services	Financial Services	Financials	Banking & Investment Services	Investment Banking & Investment Services	Diversified Investment Services	55102030
Financial Services	Financial Services	Financials	Banking & Investment Services	Investment Banking & Investment Services	Financial & Commodity Market Operators &	55102050

Materiality Group	Intermediate Materiality Group	Economic Sector	Business Sector	Industry Group	Industry	TRBC Code
					Service Providers	
Financial Services	Financial Services	Financials	Collective Investments	Collective Investments	UK Investment Trusts	55501010
Financial Services	Financial Services	Financials	Collective Investments	Collective Investments	Mutual Funds	55501020
Financial Services	Financial Services	Financials	Collective Investments	Collective Investments	Closed End Funds	55501030
Financial Services	Financial Services	Financials	Collective Investments	Collective Investments	Exchange-Traded Funds	55501040
Financial Services	Financial Services	Financials	Collective Investments	Collective Investments	Pension Funds	55501050
Financial Services	Financial Services	Financials	Collective Investments	Collective Investments	Insurance Funds	55501060
Financial Services	Financial Services	Technology	Financial Technology (Fintech) & Infrastructure	Financial Technology (Fintech) & Infrastructure	Financial Technology (Fintech)	57301010
Financial Services	Financial Services	Technology	Financial Technology (Fintech) & Infrastructure	Financial Technology (Fintech) & Infrastructure	Crowd Collaboration	57301020
Financial Services	Financial Services	Technology	Financial Technology (Fintech) & Infrastructure	Financial Technology (Fintech) & Infrastructure	Blockchain & Cryptocurrency	57301030
Financial Services	Financial Services	Technology	Financial Technology (Fintech) & Infrastructure	Financial Technology (Fintech) & Infrastructure	Miscellaneous Fintech Infrastructure	57301090
Financial Services	Insurance providers	Financials	Insurance	Insurance	Multiline Insurance & Brokers	55301010
Financial Services	Insurance providers	Financials	Insurance	Insurance	Property & Casualty Insurance	55301020
Financial Services	Insurance providers	Financials	Insurance	Insurance	Life & Health Insurance	55301030
Financial Services	Insurance providers	Financials	Insurance	Insurance	Reinsurance	55301050
Financial Services	Insurance providers	Financials	Investment Holding Companies	Investment Holding Companies	Investment Holding Companies	55601010
Food & Beverage	Food & Beverage Production	Consumer Non-Cyclicals	Food & Beverages	Beverages	Brewers	54101010
Food & Beverage	Food & Beverage Production	Consumer Non-Cyclicals	Food & Beverages	Beverages	Distillers & Wineries	54101020
Food & Beverage	Food & Beverage Production	Consumer Non-Cyclicals	Food & Beverages	Beverages	Non-Alcoholic Beverages	54101030
Food & Beverage	Food & Beverage Production	Consumer Non-Cyclicals	Food & Beverages	Food & Tobacco	Fishing & Farming	54102010
Food & Beverage	Food & Beverage Production	Consumer Non-Cyclicals	Food & Beverages	Food & Tobacco	Food Processing	54102020
Food & Beverage	Food & Beverage Production	Consumer Non-Cyclicals	Food & Beverages	Food & Tobacco	Tobacco	54102030
Food & Beverage	Food & Beverages Retail	Consumer Non-Cyclicals	Food & Drug Retailing	Food & Drug Retailing	Food Retail & Distribution	54301020
Healthcare	Healthcare manufacturing	Healthcare	Healthcare Services & Equipment	Healthcare Equipment & Supplies	Advanced Medical	56101010

Materiality Group	Intermediate Materiality Group	Economic Sector	Business Sector	Industry Group	Industry	TRBC Code
					Equipment & Technology	
Healthcare	Healthcare manufacturing	Healthcare	Healthcare Services & Equipment	Healthcare Equipment & Supplies	Medical Equipment, Supplies & Distribution	56101020
Healthcare	Healthcare manufacturing	Healthcare	Pharmaceuticals & Medical Research	Pharmaceuticals	Pharmaceuticals	56201040
Healthcare	Healthcare manufacturing	Healthcare	Pharmaceuticals & Medical Research	Biotechnology & Medical Research	Biotechnology & Medical Research	56202010
Healthcare	Healthcare services	Healthcare	Healthcare Services & Equipment	Healthcare Providers & Services	Healthcare Facilities & Services	56102010
Healthcare	Healthcare services	Healthcare	Healthcare Services & Equipment	Healthcare Providers & Services	Managed Healthcare	56102020
Heavy Industry	Chemicals	Energy	Renewable Energy	Renewable Energy	Renewable Fuels	50201020
Heavy Industry	Chemicals	Basic Materials	Chemicals	Chemicals	Commodity Chemicals	51101010
Heavy Industry	Chemicals	Basic Materials	Chemicals	Chemicals	Agricultural Chemicals	51101020
Heavy Industry	Chemicals	Basic Materials	Chemicals	Chemicals	Specialty Chemicals	51101030
Heavy Industry	Chemicals	Basic Materials	Chemicals	Chemicals	Diversified Chemicals	51101090
Heavy Industry	Construction	Industrials	Industrial & Commercial Services	Construction & Engineering	Construction & Engineering	52201020
Heavy Industry	Construction	Consumer Cyclical	Cyclical Consumer Products	Homebuilding & Construction Supplies	Homebuilding	53203010
Heavy Industry	Manufacturing industrial materials	Basic Materials	Applied Resources	Paper & Forest Products	Paper Products	51301020
Heavy Industry	Textiles	Consumer Cyclical	Cyclical Consumer Products	Textiles & Apparel	Textiles & Leather Goods	53202010
Heavy Industry	Utilities	Utilities	Utilities	Electric Utilities & IPPs	Electric Utilities	59101010
Heavy Industry	Utilities	Utilities	Utilities	Electric Utilities & IPPs	Independent Power Producers	59101020
Heavy Industry	Utilities	Utilities	Utilities	Natural Gas Utilities	Natural Gas Utilities	59102010
Heavy Industry	Utilities	Utilities	Utilities	Water & Related Utilities	Water & Related Utilities	59103010
Heavy Industry	Utilities	Utilities	Utilities	Multiline Utilities	Multiline Utilities	59104010
Heavy Industry	Construction materials	Basic Materials	Mineral Resources	Construction Materials	Construction Materials	51202010
Household Goods Manufacturing	Electronics manufacturing	Consumer Cyclical	Cyclical Consumer Products	Household Goods	Appliances, Tools & Housewares	53204030
Household Goods Manufacturing	Electronics manufacturing	Technology	Technology Equipment	Computers, Phones & Household Electronics	Household Electronics	57106030
Household Goods Manufacturing	Electronics manufacturing	Technology	Technology Equipment	Integrated Hardware & Software	Integrated Hardware & Software	57107010
Household Goods Manufacturing	Household consumable manufacturing	Consumer Non-Cyclical	Personal & Household	Personal & Household	Household Products	54201010

Materiality Group	Intermediate Materiality Group	Economic Sector	Business Sector	Industry Group	Industry	TRBC Code
			Products & Services	Products & Services		
Household Goods Manufacturing	Household consumable manufacturing	Consumer Non-Cyclicals	Personal & Household Products & Services	Personal & Household Products & Services	Personal Products	54201020
Household Goods Manufacturing	Household durables manufacturing	Consumer Cyclicals	Cyclical Consumer Products	Textiles & Apparel	Apparel & Accessories	53202020
Household Goods Manufacturing	Household durables manufacturing	Consumer Cyclicals	Cyclical Consumer Products	Textiles & Apparel	Footwear	53202030
Household Goods Manufacturing	Household durables manufacturing	Consumer Cyclicals	Cyclical Consumer Products	Household Goods	Home Furnishings	53204040
Household Goods Manufacturing	Household durables manufacturing	Consumer Cyclicals	Cyclical Consumer Products	Leisure Products	Toys & Children's Products	53205010
Household Goods Manufacturing	Household durables manufacturing	Consumer Cyclicals	Cyclical Consumer Products	Leisure Products	Recreational Products	53205020
Machinery & Equipment Manufacturing	Capital goods	Consumer Non-Cyclicals	Consumer Goods Conglomerates	Consumer Goods Conglomerates	Consumer Goods Conglomerates	54401010
Machinery & Equipment Manufacturing	Aerospace & Defence	Industrials	Industrial Goods	Aerospace & Defense	Aerospace & Defense	52101010
Machinery & Equipment Manufacturing	Capital goods	Energy	Renewable Energy	Renewable Energy	Renewable Energy Equipment & Services	50201010
Machinery & Equipment Manufacturing	Capital goods	Industrials	Industrial Goods	Machinery, Tools, Heavy Vehicles, Trains & Ships	Industrial Machinery & Equipment	52102010
Machinery & Equipment Manufacturing	Capital goods	Industrials	Industrial Goods	Machinery, Tools, Heavy Vehicles, Trains & Ships	Heavy Electrical Equipment	52102040
Machinery & Equipment Manufacturing	Capital goods	Industrials	Industrial & Commercial Services	Diversified Industrial Goods Wholesale	Diversified Industrial Goods Wholesale	52202010
Machinery & Equipment Manufacturing	Construction supplies	Consumer Cyclicals	Cyclical Consumer Products	Homebuilding & Construction Supplies	Construction Supplies & Fixtures	53203020
Machinery & Equipment Manufacturing	Electronics manufacturing	Industrials	Industrial Goods	Machinery, Tools, Heavy Vehicles, Trains & Ships	Electrical Components & Equipment	52102030
Machinery & Equipment Manufacturing	Electronics manufacturing	Industrials	Industrial & Commercial Services	Professional & Commercial Services	Environmental Services & Equipment	52203010
Machinery & Equipment Manufacturing	Electronics manufacturing	Technology	Technology Equipment	Semiconductors & Semiconductor Equipment	Semiconductors	57101010
Machinery & Equipment Manufacturing	Electronics manufacturing	Technology	Technology Equipment	Semiconductors & Semiconductor Equipment	Semiconductor Equipment & Testing	57101020
Machinery & Equipment Manufacturing	Electronics manufacturing	Technology	Technology Equipment	Communications & Networking	Communications & Networking	57102010

Materiality Group	Intermediate Materiality Group	Economic Sector	Business Sector	Industry Group	Industry	TRBC Code
Machinery & Equipment Manufacturing	Electronics manufacturing	Technology	Technology Equipment	Electronic Equipment & Parts	Electronic Equipment & Parts	57104010
Machinery & Equipment Manufacturing	Electronics manufacturing	Technology	Technology Equipment	Office Equipment	Office Equipment	57105010
Machinery & Equipment Manufacturing	Electronics manufacturing	Technology	Technology Equipment	Computers, Phones & Household Electronics	Computer Hardware	57106010
Machinery & Equipment Manufacturing	Electronics manufacturing	Technology	Technology Equipment	Computers, Phones & Household Electronics	Phones & Handheld Devices	57106020
Machinery & Equipment Manufacturing	Manufacturing of transport and parts	Industrials	Industrial Goods	Machinery, Tools, Heavy Vehicles, Trains & Ships	Heavy Machinery & Vehicles	52102020
Machinery & Equipment Manufacturing	Manufacturing of transport and parts	Industrials	Industrial Goods	Machinery, Tools, Heavy Vehicles, Trains & Ships	Shipbuilding	52102050
Machinery & Equipment Manufacturing	Manufacturing of transport and parts	Consumer Cyclical	Automobiles & Auto Parts	Automobiles & Auto Parts	Auto & Truck Manufacturers	53101010
Machinery & Equipment Manufacturing	Manufacturing of transport and parts	Consumer Cyclical	Automobiles & Auto Parts	Automobiles & Auto Parts	Auto, Truck & Motorcycle Parts	53101020
Machinery & Equipment Manufacturing	Manufacturing of transport and parts	Consumer Cyclical	Automobiles & Auto Parts	Automobiles & Auto Parts	Tires & Rubber Products	53101030
Machinery & Equipment Manufacturing	Packaging and printing	Basic Materials	Applied Resources	Containers & Packaging	Non-Paper Containers & Packaging	51302010
Machinery & Equipment Manufacturing	Packaging and printing	Basic Materials	Applied Resources	Containers & Packaging	Paper Packaging	51302020
Machinery & Equipment Manufacturing	Packaging and printing	Industrials	Industrial & Commercial Services	Professional & Commercial Services	Commercial Printing Services	52203020
Media & Communications	Communications	Technology	Telecommunications Services	Telecommunications Services	Integrated Telecommunications Services	57401010
Media & Communications	Communications	Technology	Telecommunications Services	Telecommunications Services	Wireless Telecommunications Services	57401020
Media & Communications	Digital Consumer Platforms	Technology	Software & IT Services	Software & IT Services	Online Services	57201030
Media & Communications	Media	Consumer Cyclical	Cyclical Consumer Services	Media & Publishing	Advertising & Marketing	53302010
Media & Communications	Media	Consumer Cyclical	Cyclical Consumer Services	Media & Publishing	Broadcasting	53302020
Media & Communications	Media	Consumer Cyclical	Cyclical Consumer Services	Media & Publishing	Entertainment Production	53302030
Media & Communications	Media	Consumer Cyclical	Cyclical Consumer Services	Media & Publishing	Consumer Publishing	53302040
Real Estate	Real Estate	Real Estate	Real Estate	Real Estate Operations	Real Estate Rental, Development & Operations	60101010

Materiality Group	Intermediate Materiality Group	Economic Sector	Business Sector	Industry Group	Industry	TRBC Code
Real Estate	Real Estate	Real Estate	Real Estate	Real Estate Operations	Real Estate Services	60101020
Real Estate	Real Estate	Real Estate	Real Estate	Residential & Commercial REITs	Diversified REITs	60102010
Real Estate	Real Estate	Real Estate	Real Estate	Residential & Commercial REITs	Commercial REITs	60102020
Real Estate	Real Estate	Real Estate	Real Estate	Residential & Commercial REITs	Residential REITs	60102030
Real Estate	Real Estate	Real Estate	Real Estate	Residential & Commercial REITs	Specialized REITs	60102040
Transport & Logistics	Industrial Suppliers	Industrials	Industrial & Commercial Services	Professional & Commercial Services	Business Support Supplies	52203060
Transport & Logistics	Transport	Industrials	Transportation	Freight & Logistics Services	Courier, Postal, Air Freight & Land-based Logistics	52405010
Transport & Logistics	Transport	Industrials	Transportation	Freight & Logistics Services	Marine Freight & Logistics	52405020
Transport & Logistics	Transport	Industrials	Transportation	Freight & Logistics Services	Ground Freight & Logistics	52405030
Transport & Logistics	Transport	Industrials	Transportation	Passenger Transportation Services	Airlines	52406010
Transport & Logistics	Transport	Industrials	Transportation	Passenger Transportation Services	Passenger Transportation, Ground & Sea	52406020
Transport & Logistics	Transport Infrastructure	Industrials	Transportation	Transport Infrastructure	Airport Operators & Services	52407010
Transport & Logistics	Transport Infrastructure	Industrials	Transportation	Transport Infrastructure	Marine Port Services	52407020
Transport & Logistics	Transport Infrastructure	Industrials	Transportation	Transport Infrastructure	Highways & Rail Tracks	52407030

Appendix 4: Controversies, Bias Correction

Equation 8 described in “Step 4: Apply size bias-correction and final scaling to the overall score”, listed below, can be derived by considering the relationship between the raw average controversies score S_a , and the rolling mean of market capitalization for each company m .

$$S_{out} = f_{cap} \left(A_1 \frac{S_a + 1}{m^{A_2}} \right) \quad (8)$$

Where:

- $A_1 = 1081.047204$
- $A_2 = 0.211744$

Modelling the relationship between averaged raw score S_a and rolling mean market capitalization m , the clearest relationship was found between their log-transformed variables, which fit a linear model. Note we calculated $S_a + 1$ instead for numerical stability while plotting these relationships.

After the variables have been transformed by natural logarithm, fitting a linear model then looks like $\ln(y) = \alpha + \beta * \ln(x)$, where x, y are the independent and dependent variables respectively, and α, β are some constants to be found. This can be simplified to $y = e^{\alpha} \times x^{\beta}$.

The aim of this bias modelling is to use this estimated bias and correct y to form a new score without a relationship to variable x . We opted to do that by finding the multiplicative residual, i.e. by dividing y through by the right-hand side of the equation so that $y_{new} = \frac{y}{e^{\alpha} \times x^{\beta}}$, a de-biased new score. The constant e^{α} can also be manipulated to change the scale of y_{new} .

Transforming the variables to our problem ($y = S_a + 1$, $e^{\alpha} = \frac{1}{A_1}$, $x = m$, and $\beta = A_2$), one can derive the equation below which models the behavior of S_a based on the market capitalization of a company, or in other words, the bias.

$$S_a + 1 = \frac{1}{A_1} m^{A_2} \quad (18)$$

From this follows equation 8 by de-biasing (dividing through by the right-hand side), then applying f_{cap} which is explained in equation 9.

We also adjusted the A_1 parameter so that the new output score has a distribution that fits better within the range of 0-5, so a small proportion of companies achieve the top scores, but we see more utilization of the full range.

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