MSCI Index ESG Metrics Calculation Methodology

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Contents

1   Introduction

This document outlines the methodology used to calculate and maintain index level ESG metrics:

- Benchmark Regulation

    Index level ESG information as per the Commission Delegated Regulation (EU) 2020/1816 of 17 July 2020 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council, as it forms part of UK domestic law by virtue of the European Union (Withdrawal) Act 2018, as regards the explanation in the benchmark statement of how environmental, social and governance factors are reflected in each benchmark provided and published (the "Delegated Act 2020/1816")[1].

    More information on the benchmark regulation applicable to MSCI indexes can be found on the index regulation page of MSCI's website at: https://www.msci.com/index-regulation under "EU/UK Benchmark Regulation".

- EU Sustainable Finance Disclosure Regulation (SFDR)

    Index level ESG metrics, using select metrics as set out in the Final Report on the Draft Regulatory Technical Standards with regard to the content, methodologies and presentation of disclosures pursuant to Article 2a(3), Article 4(6) and (7), Article 8(3), Article 9(5), Article 10(2) and Article 11(4) of Regulation (EU) 2019/2088, dated 2 February 2021[2].

- Other index level ESG metrics not required under EU SFDR or the Delegated Act 2020/1816

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[1] https://www.legislation.gov.uk/eur/2020/1816/contents

[2] https://www.legislation.gov.uk/eur/2019/2088/contents

2 Definition of ESG Metrics

The list and definition of each index level ESG metric published by MSCI is provided below.

2.1 Benchmark Regulation Metrics

Annex I to the Delegated Act 2020/1816 provides the relevant disclosure template, and Annex II provides a list of mandatory and voluntary ESG metrics based on the underlying assets of the indexes (e.g., equity, fixed income, etc.). MSCI discloses all mandatory ESG metrics and select voluntary ESG metrics, as well as a set of additional ESG metrics not mentioned in the Delegated Act for the purposes of enhancing transparency for the investment community.

The list and definition of each metric published by MSCI is provided below. The table also includes the relevant text from the Delegated Act 2020/1816 (Annex II).

2.1.1 Mandatory Metrics (Equity and Corporate Bond Indexes)

Metric Name	Metric Definition	Text from Delegated Act 2020/1816
Board Gender Diversity	Weighted average percentage of women on the boards of index constituents.	Weighted average percentage of female board members.
Board Independence	Weighted average percentage of board members that meet MSCI ESG Research criteria for board independence.	Weighted average percentage of board members who are independent.
Bribery & Corruption Convictions	Weighted average number of convictions for violations of anti-corruption and anti-bribery laws.	Number of convictions and amount of fines for violations of anti-corruption and anti-bribery laws.
Bribery & Corruption Fines	Weighted average amount of fines for violation of anti-corruption and anti-bribery laws.	
Controversial Weapons	Exposure to companies with any tie to controversial weapons (cluster munitions, landmines, depleted uranium weapons, biological/chemical weapons, blinding lasers, non-detectable fragments and incendiary weapons), as defined in the MSCI Global ex Controversial Weapons Indexes Methodology available at https://www.msci.com/index/methodology/latest/XCW.	Weighted average percentage of benchmark constituents in the controversial weapons sector.
Estimated Emissions	Exposure to companies with estimated Scope 1 and Scope 2 carbon emissions.	Percentage of GHG emissions reported versus estimated.
Female: Male Board Diversity Ratio	Weighted average ratio of female to male board members.	Weighted average ratio of female to male board members.
Fossil Fuel-Based Sector Exposure (NACE)	Exposure to companies that are involved in carbon-intensive activities based on Global Industry	Exposure of the benchmark portfolio to companies the

	Classification Standard (GICS®)[3] sub-industries that are mapped from the EU's NACE classification, following a two-step approach: 1. An initial list of sub-industries based on carbon-intensive activities that fall under Divisions 05 to 09, 19 and 20 of Annex I to Regulation (EC) No 1893/2006; 2. The list is then filtered to exclude sub-industries wherein 80% of companies in the MSCI ACWI IMI universe belong to the Solutions or Neutral categories using MSCI ESG Research's Low Carbon Transition framework.	activities of which fall under Divisions 05 to 09, 19 and 20 of Annex I to Regulation (EC) No 1893/2006.
Gender Pay Gap	Weighted average difference between the average gross hourly earnings of male and female employees as a percentage of male gross earnings, based on company reported data. Note that reporting on this metric is inconsistent: some companies report the absolute or uncontrolled pay gap while other control for compensable factors such as role or location.	Weighted average gender pay gap.
Green Bonds[4]	Exposure to securities that meet the green bond criteria as defined by the MSCI ESG Research Green Bond Assessment methodology based on their use of proceeds and adherence to the four Green Bond Principles (GBPs).	Percentage of green bonds in the benchmark portfolio.
Green Revenue	Weighted average of index constituents' percentage of revenue derived from Environmental Impact Solutions. This field represents the total of all revenues derived from any of the six environmental impact themes including alternative energy, energy efficiency, green building, pollution prevention, sustainable water, or sustainable agriculture.	Exposure of the benchmark portfolio to activities included in the environmental goods and services sector, as defined in Article 2, point (5) of Regulation (EU) No 691/2011 of the European Parliament and of the Council.
High Climate Impact Sector Exposure	Exposure to companies that belong to high climate impact sectors based on GICS® sub-industries that are mapped from the EU's NACE classification. This includes sectors listed in Sections A to H and Section L of Annex I to Regulation (EC) No 1893/2006 of the European Parliament and of the Council.	Degree of exposure of the portfolio to the sectors listed in Sections A to H and Section L of Annex I to Regulation (EC) No 1893/2006 as a percentage of the total weight in the portfolio.
Lack of Due Diligence Policy (ILO)	Exposure to companies without due diligence policies on labor issues addressed by the fundamental International Labor Organisation (ILO) Conventions 1 to 8.	Exposure of the benchmark portfolio to companies without due

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[3] GICS, the global industry classification standard jointly developed by MSCI Inc. and S&P Global Market Intelligence.

[4] Only disclosed for fixed income indexes.

		diligence policies on issues addressed by Conventions 1 to 8 of the International Labor Organisation.
Reported Emissions	Exposure to companies with reported Scope 1 and Scope 2 carbon emissions.	Percentage of GHG emissions reported versus estimated.
Social Violations (Count)	Absolute number of index constituents involved in social violations. Social violations are defined as Red Flag controversies related to customers, human rights & community impact or labor rights & supply chain, in accordance with the MSCI ESG Controversies methodology. A Red Flag indicates an ongoing Very Severe ESG controversy implicating a company directly through its actions, products, or operations.	Number of benchmark constituents subject to social violations (absolute number and relative divided by all benchmark constituents), as referred to in international treaties and conventions, United Nations principles and, where applicable, national law.
Social Violations (% of Constituents)	Percentage of index constituents involved in social violations. Social violations are defined as Red Flag controversies related to customers, human rights & community impact or labor rights & supply chain, in accordance with the MSCI ESG Controversies methodology. A Red Flag indicates an ongoing Very Severe ESG controversy implicating a company directly through its actions, products, or operations.	
Tobacco - Producer - Any Revenue	Exposure to companies involved in the production of tobacco products. Tobacco products include nicotine-containing products, including traditional and alternative tobacco smoking products.	Weighted average percentage of benchmark constituents in the Tobacco sector
Total Recordable Injury Rate	Weighted average total recordable injury rate (TRIR) per million hours worked. The TRIR includes fatalities, lost time injuries, restricted work injuries, and medical treatment injuries.	Weighted average ratio of accidents, injuries, fatalities.
Weighted Average Carbon Intensity by Sales - Scope 1 + 2 + 3	Weighted average Scope 1, Scope 2 and Scope 3 carbon emissions intensity normalized by sales.	Greenhouse gas (GHG) intensity of the benchmark.

2.1.2 Mandatory Metrics (Sovereign Bond Indexes)

Metric Name	Metric Definition	Text from Delegated Act 2020/1816
International Convention Signatory (%) - Sovereign	Exposure to issuers that are a party to international conventions. MSCI ESG Government Ratings include specific environment and social conventions (detailed in the appendix).	The percentage of underlying fund management companies signed up to international standards.
Wtd Avg GHG Intensity (t/USD million GDP nominal) - Sovereign	Weighted average of sovereign issuers' carbon emissions generated by all economic activities performed domestically, per unit of GDP (USD million).	GHG intensity of the benchmark.

Reported Emissions (%) - Sovereign	Exposure to sovereign issuers with reported carbon emissions	Reported emissions %
Estimated Emissions (%) - Sovereign	Exposure to sovereign issuers with estimated carbon estimation	Estimated emissions %
Green Bonds (%) - Sovereign	Exposure to securities that meet the green bond criteria as defined by the MSCI ESG Research Green Bond Assessment methodology based on their use of proceeds and adherence to the four Green Bond Principles (GBPs).	Percentage of green bonds in the index.
Social Violations (Count) - Sovereign	The number of unique issuers with European External Action Service (EEAS) restrictive measures (sanctions) on imports and exports.	Number of index constituents subject to social violations (absolute number and relative number divided by all index constituents), as referred to in international treaties and conventions, United Nations principles and, where applicable, national law.
Social Violations (% of Constituents) - Sovereign	The percentage of unique issuers with European External Action Service (EEAS) restrictive measures (sanctions) on imports and exports.	
Human Rights Performance - Sovereign	Weighted average of the WJP Rule of Law Index, Fundamental Rights Sub-score (measures a country's performance on human rights issues, as per Factor 4 of the WJP Rule of Law Index. Scores can range from 0-1.0, and higher values denote stronger national performance across a broad range of human rights issues)	Average human rights performance of the issuers (including a quantitative indicator and the methodology used to calculate it).
Income Inequality Score - Sovereign	Weighted average Income Inequality score from MSCI ESG Government Ratings. The Income Inequality score measures whether a sovereign's GINI Index score is greater than 50 (higher number indicates greater inequality)	Average income inequality score, measuring the distribution of income and economic inequality among the participants in a particular economy (including a quantitative indicator and the methodology used to calculate it).
Press Freedom Sovereign Score - Sovereign	Weighted average of the World Press Freedom Index score from MSCI ESG Government Ratings. This uses data from the Reporters Without Borders to measure the level of press freedom, where those countries with higher scores have higher levels of press freedom (detailed in the appendix).	Average freedom of expression score measuring the extent to which political and civil society organizations can operate freely (including a quantitative indicator and the methodology used to calculate it).
Corruption Score - Sovereign	Weighted average of the Control of Corruption score from MSCI ESG Government Ratings. This uses data from the World Bank's World Governance Indicators to measure the extent to which power could be exercised for private gain (detailed in the appendix).	Average corruption score measuring the perceived level of public sector corruption (including a quantitative indicator and the methodology used to calculate it).
Stability & Peace Score - Sovereign	Weighted average of Stability & Peace score from MSCI ESG Government	Average political stability score, measuring the likelihood that

	Ratings. This measures the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means (detailed in the appendix).	the current regime will be overthrown by the use of force (including a quantitative indicator and the methodology used to calculate it).
Rule of Law Score - Sovereign	Weighted average of Rule of Law score from MSCI ESG Government Ratings. This measures the extent to which agents have confidence in and abide by the rules of society, sourced from WDI (detailed in the appendix).	Average rule of law score, based on the absence of corruption, respect for fundamental rights, and the state of civil and criminal justice (including a quantitative indicator and the methodology used to calculate it).

2.1.3 Voluntary Metrics (Equity and Corporate Bond Indexes)

Metric Name	Metric Definition	Text from Delegated Act 2020/1816
Environmental Pillar Score	Weighted average Environmental Pillar Score. The Environmental Pillar Score measures index constituents' management of and exposure to key environmental risks and opportunities. Scores range from 10 (best) to 0 (worst).	Weighted average environmental rating of the benchmark.
ESG Score	Weighted average ESG Score. The ESG Score indicates how well the index constituents manage their most material ESG risks relative to sector peers. Scores range from 10 (best) to 0 (worst).	Weighted average ESG rating of the benchmark.
Governance Pillar Score	Weighted average Governance Pillar Score. The Governance Pillar Score measures index constituents' management of and exposure to key governance risks. Scores range from 10 (best) to 0 (worst).	Weighted average governance rating of the benchmark.
Green CapEx %	Weighted average of energy-related index constituents' percentage of capital expenditures (CapEx) derived from renewable energy. The scope of energy-related constituents are defined as companies belonging to the Utilities GICS® sector and those belonging to the Integrated Oil & Gas, Oil & Gas Exploration and Production, Oil & Gas Refining and Marketing, and Oil & Gas Storage & Transportation GICS® sub-industries.	Exposure of the benchmark portfolio to renewable energy as measured by capital expenditures (CapEx) in those activities (as a share of total CapEx by energy companies included in the portfolio).
Physical Risk Climate VaR %	Weighted average of index constituents' Physical Risk Climate VaR. This factor identifies a security's "worst-case" (95th percentile) downside or upside potential, expressed as a percentage of the security's market value, assuming trends	Exposure of the benchmark portfolio to climate-related physical risks, measuring the effects of extreme weather events on companies' operations and production or on

	in extreme cold, extreme heat, extreme precipitation, heavy snowfall, extreme wind, coastal flooding, fluvial flooding, tropical cyclones, river low flow and wildfires continue along the 4°C IPCC SSP3-7.0 scenario.	the different stages of the supply chain (based on issuer exposure).
Social Pillar Score	Weighted average Social Pillar Score. The Social Pillar Score measures index constituents' management of and exposure to key social risks and opportunities. Scores range from 10 (best) to 0 (worst).	Weighted average social rating of the benchmark.

2.1.4 Disclosures for Climate Transition Benchmarks and Paris Aligned Benchmarks

Climate Transition Benchmarks (CTBs) and Paris Aligned Benchmarks (PABs) as defined in Commission Delegated Regulation (EU) 2020/1818 are subject to additional transparency requirements. The following data points are disclosed specifically for CTBs and PABs:

Data Point Name	Data Point Definition	Regulatory Reference	Source
Base Date	Date against which the regulatory decarbonization trajectory of the index is calculated, in line with the "base year" concept defined in Commission Delegated Regulation (EU) 2020/1818.	Article 14 of Commission Delegated Regulation (EU) 2020/1818	Index Methodology
Decarbonization %	Degree to which the IPCC decarbonization trajectory (1.5°C with no or limited overshoot) has been achieved on average per year since creation.	Item 9 (b) of Annex I to Commission Delegated Regulation (EU) 2020/1816	ESG Metric
Overlap between the benchmark and its investable universe (using the active share at asset level)	Overlap between those benchmarks and their investable universe, as defined in Article 1, point (e), of Commission Delegated Regulation (EU) 2020/1818, using the active share at asset level.	Item 9 (c) of Annex I to Commission Delegated Regulation (EU) 2020/1816	ESG Metric
Weighted average absolute GHG emissions at the base date[5]	Weighted average absolute GHG emissions of the index at the base date, in tCO2eq.	Article 14 of Commission Delegated Regulation (EU) 2020/1818	Index Methodology
Weighted average GHG intensity at the base date[6]	Weighted average GHG intensity of the index at the base date, in tCO2eq / million USD EVIC.	Article 14 of Commission Delegated Regulation (EU) 2020/1818	Index Methodology

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[5] Only disclosed for fixed income indexes

[6] Only disclosed for equity indexes

Year on Year Decarbonization Trajectory	Targeted average annual decarbonization rate.	Item 9 (a) of Annex I to Commission Delegated Regulation (EU) 2020/1816	Index Methodology

The column "Source" indicates how the corresponding data point is determined:

- Data points where the Source is "Index Methodology" are described in the corresponding index methodology documents, available under https://www.msci.com/indexes/index-resources/index-methodology.

- Data points where the Source is "ESG Metric" are calculated as per the rules described in section 3.

2.1.5 Controversial Weapons – International Treaties and Conventions

The Delegated Act 2020/1816 requires the disclosure of "International treaties and conventions, United Nations principles or, where applicable, national law used in order to determine what constitutes a controversial weapon".

The list of treaties, conventions and relevant national laws related to the "Controversial Weapons %" metric is provided below:

- The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction.

- The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction.

- Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction.

- Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects.

- The Convention on Cluster Munitions.

- Belgian national law on depleted uranium weapons[7]

2.1.6 Additional ESG Metrics

In addition to the mandatory and voluntary ESG metrics listed in sections 2.1.1 to 2.1.5, MSCI discloses additional ESG metrics:

- Where an index incorporates additional ESG factors in the benchmark methodology[8], Article 2(6) of the Delegated Act 2020/1816 requires the disclosure of corresponding index-level

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[7] "Loi du 16/07/2009 modifiant la loi du 8 juin 2006 reglant des activites economiques et individuelles avec des armes, en vue d'interdire le financement de la fabrication, de l'utilisation ou de la detention des armes a uranium", available under https://etaamb.openjustice.be/fr/loi-du-16-juillet-2009_n2009003286.html.

[8] As per the requirements of Commission Delegated Regulation (EU) 2020/1817, the additional ESG factors reflected in an index methodology are disclosed as part of the index methodology sets under https://www.msci.com/indexes/index-resources/index-methodology.

scores. MSCI discloses the relevant scores for each relevant index as additional ESG metrics on the MSCI Index Profile Tool.

- To enhance transparency, MSCI discloses some additional ESG metrics (e.g., exposure to companies involved in ESG controversies that are classified as Red Flags) independently of the usage of the corresponding ESG factors in the benchmark methodology.

The definitions and calculation rules of all ESG metrics (mandatory, voluntary, and additional) published by MSCI under the Benchmark Regulation are provided in a separate spreadsheet available for download on the MSCI Index Profile Tool.

2.2 SFDR Mandatory Metrics (Equity and Corporate Bond Indexes)

Metric Name	Metric Definition
Carbon Footprint (Scope 1+2+3)	Weighted average Scope 1, Scope 2 and Scope 3 carbon emissions intensity normalized by enterprise value including cash. (Unit: tons of CO2/ EUR million enterprise value including cash)
Carbon Footprint (Scope 1)	Weighted average Scope 1 carbon emissions intensity normalized by enterprise value including cash. (Unit: tons of CO2/ EUR million enterprise value including cash)
Carbon Footprint (Scope 2)	Weighted average Scope 2 carbon emissions intensity normalized by enterprise value including cash. (Unit: tons of CO2/ EUR million enterprise value including cash)
Carbon Footprint (Scope 3)	Weighted average Scope 3 carbon emissions intensity normalized by enterprise value including cash. (Unit: tons of CO2/ EUR million enterprise value including cash)
Carbon Footprint (Scope 1+2)	Weighted average Scope 1 and Scope 2 carbon emissions intensity normalized by enterprise value including cash. (Unit: tons of CO2/ EUR million enterprise value including cash)
GHG Intensity of Investee Companies	Weighted average Scope 1, Scope 2 and Scope 3 carbon emissions intensity normalized by sales. (Unit: tons of CO2e / million EUR of sales).
Exposure to companies active in fossil fuel sector %	Exposure to companies involved in oil and gas and thermal coal related revenue generating activities. The metric does not include revenue generating activities from metallurgical coal, and storage and transportation of coal.
Share of non-renewable energy consumption and production %	Weighted average energy consumption and/or production from non-renewable sources as a percentage of total energy use and/or generation.
Energy consumption intensity per high impact climate sector	Energy consumption (GwH) per million EUR revenue per high impact climate sector (based on GICS® sub-industries that are mapped from the EU's NACE classification. This includes sectors listed in Sections A to H and Section L of Annex I to Regulation (EC) No 1893/2006 of the European Parliament and of the Council).
Activities negatively affecting biodiversity - sensitive areas	Exposure to companies having operations in or near to biodiversity sensitive areas that have been implicated in Red or Orange Flag controversies with adverse impact on the environment. A Red Flag indicates an ongoing Very Severe ESG controversy implicating a company directly through its actions, products, or operations. An Orange Flag indicates an ongoing Severe ESG controversy implicating a company directly, or a Very Severe ESG controversy

	that is either partially resolved or indirectly attributed to the company's actions, products, or operations.
Emissions to water	Weighted average tons pollutants released to surface water normalized by enterprise value including cash. (Unit: tons/EUR million enterprise value including cash)
Hazardous Waste Ratio	Weighted average hazardous waste normalized by enterprise value including cash. (Unit: tons/EUR million enterprise value including cash)
Violations of UN Global Compact principles and Organisation for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises	Exposure to companies involved in ESG controversies that are classified as Red Flags (MSCI ESG Controversy Score of 0) . A Red Flag indicates an ongoing Very Severe ESG controversy implicating a company directly through its actions, products, or operations.
Lack of processes and compliance mechanisms to monitor compliance with UN Global Compact principles and OECD Guidelines for Multinational Enterprises %	Exposure to companies without policies to monitor compliance with UNGC Principles.
Unadjusted Gender Pay Gap %	Weighted average difference between the average gross hourly earnings of male and female employees as a percentage of male gross earnings, based on company reported data. Note that reporting on this metric is inconsistent: some companies report the absolute or uncontrolled pay gap while other control for compensable factors such as role or location.
Board Gender Diversity %	Weighted average percentage of women on the boards of index constituents.
Exposure to controversial weapons[9] %	Exposure to companies with industry ties to landmines, cluster munitions, chemical weapons or biological weapons. Notes: Industry ties cover ownership, manufacturing and investments. Ties to landmines do not cover related safety products.

[9] As defined in the ESA's Final Report on the draft Regulatory Technical Standards:
https://www.esma.europa.eu/sites/default/files/library/jc_2021_03_joint_esas_final_report_on_rts_under_sfdr.pdf

2.3　Other Metrics (Equity and Corporate Bond Indexes)

For transparency and reporting purposes, MSCI also provides the below metrics related to SFDR and the EU Taxonomy Regulation[10].

Metric Name	Metric Definition
Baseline Criteria Test (% Fail)	Exposure to companies that have 1) MSCI ESG Rating B or CCC, 2) MSCI ESG Controversies assessed as Red or Orange Flag, 3) Any tie to controversial (banned) weapons, 4) At least 1% of their revenue from thermal coal mining, and/or 5) Involvement in tobacco - in particular, tobacco production or at least 5% of their aggregate revenue from tobacco-related activities.
Economic Activities Test	Exposure to companies generating at least 20% of their revenue from products or services targeting one or more social or environmental objectives.
Estimated Environmental Impact Involvement (%)	Weighted average of index constituents' percentage of revenue derived from MSCI Sustainable Impact Solutions' environmental impact themes (including alternative energy, energy efficiency, green building, pollution prevention, sustainable water, or sustainable agriculture), provided that such constituents meet MSCI ESG Research's criteria to be considered an EU Sustainable Investment as per the MSCI SFDR Article 2(17) Sustainable Investment Methodology.
Estimated EU Taxonomy % Alignment	Weighted average of index constituents' estimated maximum percent of revenue from products and services addressing environmental objectives, based on the MSCI Sustainable Impact Metrics framework, provided that such constituents do not have any of the following characteristics: 1) Red and Orange Flag environmental controversies 2) Red Flag social and governance controversies 3) Involvement in tobacco - in particular, tobacco production or at least 5% of their aggregate revenue from tobacco-related activities 4) Any tie to controversial (banned) weapons.
EU Taxonomy Reported Non-Financial - Total Aligned OpEx (%)	Weighted average of index constituents' reported percentage of total operational expenditure from aligned activities under the EU Taxonomy regulation (Non Financial companies).
EU Taxonomy Reported Non-Financial - Total Aligned CapEx (%)	Weighted average of index constituents' reported percentage of total capital expenditure from aligned activities under the EU Taxonomy regulation (Non Financial companies).
EU Taxonomy Reported - Eligible Aligned Gas Turnover (%)	Weighted average of index constituents' reported percentage of Turnover aggregated to taxonomy eligible and aligned gas activities referred to in Sections 4.29, 4.30 and 4.31 of Annexes I and II to Delegated Regulation 2021/2139.
EU Taxonomy Reported - Eligible Aligned Gas CapEx (%)	Weighted average of index constituents' reported percentage of total capital expenditure aggregated to taxonomy eligible and aligned gas activities referred to in Sections 4.29, 4.30 and 4.31 of Annexes I and II to Delegated Regulation 2021/2139.
EU Taxonomy Reported - Eligible Aligned Gas OpEx (%)	Weighted average of index constituents' reported percentage of total operational expenditure aggregated to taxonomy eligible and aligned gas

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[10] Regulation (EU) 2020/852 of the European Parliament and of the Council, available under https://eur-lex.europa.eu/eli/reg/2020/852/oj/eng

	activities referred to in Sections 4.29, 4.30 and 4.31 of Annexes I and II to Delegated Regulation 2021/2139.
EU Taxonomy Reported - Eligible Aligned Nuclear Turnover (%)	Weighted average of index constituents' reported percentage of Turnover aggregated to taxonomy eligible and aligned nuclear activities referred to in Sections 4.26, 4.27 and 4.28 of Annexes I and II to Delegated Regulation 2021/2139.
EU Taxonomy Reported - Eligible Aligned Nuclear CapEx (%)	Weighted average of index constituents' reported percentage of total capital expenditure aggregated to taxonomy eligible and aligned nuclear activities referred to in Sections 4.26, 4.27 and 4.28 of Annexes I and II to Delegated Regulation 2021/2139.
EU Taxonomy Reported - Eligible Aligned Nuclear OpEx (%)	Weighted average of index constituents' reported percentage of total operational expenditure aggregated to taxonomy eligible and aligned nuclear activities referred to in Sections 4.26, 4.27 and 4.28 of Annexes I and II to Delegated Regulation 2021/2139.
Estimated Social Impact Involvement (%)	Weighted average of index constituents' percentage of revenue from MSCI Sustainable Impact Solutions' social impact themes (nutrition, sanitation, major diseases treatment, SME finance, education, affordable real estate, or connectivity), provided that such constituents meet MSCI ESG Research's criteria to be considered an EU Sustainable Investment as per the MSCI SFDR Article 2(17) Sustainable Investment Methodology.
Sustainable Investment Test	Aggregated exposure to companies that could be considered sustainable investment under SFDR Article 2(17), based on MSCI's interpretation of the three building blocks: good governance practices, do no significant harm, and positive contribution criteria. Positive contribution can be demonstrated either by meeting the economic activity test (at least 20% of revenue from MSCI defined Sustainable Impact Solutions) or having a carbon emissions reduction target approved by the Science Based Targets initiative (SBTi).

3 Calculation of Metrics

3.1 Data Used for the Calculation

The calculation of index level ESG metrics use the following data:

- Index security weights as of the close of the last weekday of the month. The weights do not take into account changes to be effective after the last weekday of the month.

- Company ratings and research provided by MSCI ESG Research[11] as of the last weekday of the month.

- Global Industry Classification Standard (GICS®) classification of companies as of the last weekday of the month.

- Fundamental data of companies as of the last weekday of the month[12] [13].

The metrics for an MSCI index are generally calculated based on security data for that index.

However, for the following MSCI indexes the metrics are calculated based on security data for the "parent index" or "underlying index"[14].

- MSCI Hedged Indexes

- MSCI Daily Hedged Indexes[15]

- MSCI Adaptive Hedged Indexes

- MSCI Cross Hedged Indexes

- MSCI Dividend Point Indexes

- MSCI Risk Control Indexes[7]

- MSCI Decrement Indexes[7]

- MSCI Short & Leveraged Indexes[7, 16]

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[11] See section 5 for further information regarding ESG and climate data used that MSCI Limited sources from MSCI ESG Research LLC, a separate subsidiary of MSCI Inc. MSCI ESG Research is solely responsible for the creation, determination and management of such data.

[12] For more information, please refer to the MSCI Fundamental Data Methodology available at: https://www.msci.com/index-methodology

[13] MSCI uses the latest available Enterprise Value Including Cash (EVIC) data as of the last weekday of the month for the calculation of index level ESG metrics. Please note that the EVIC data used for such calculation may not be the same as the EVIC data that is simultaneously provided by MSCI ESG Research, as there exists a lag between the time the data is available for use in the calculation of index level ESG metrics and the time it is distributed by MSCI ESG Research.

[14] For more information, please refer to the respective index methodology books available at: https://www.msci.com/index-methodology

[15] ESG metrics disclosed only for MSCI indexes that pursue ESG objectives.

[16] For indexes that combine long and short positions, the metrics are calculated based on security data for the long component index.

3.2 Calculation Details and Formulas

This section shows how the different data (index security weights, ESG data, GICS® classification, Fundamental data) is combined and aggregated to derive each of the index level ESG metrics.

ESG data from MSCI ESG Research is displayed in upper characters. The detailed definition of each ESG datapoint is provided in Appendix I.

3.2.1 Benchmark Regulation Metrics

The calculation rules for all ESG metrics (mandatory, voluntary, and additional) published by MSCI under the Benchmark Regulation are provided in a separate spreadsheet available for download on the MSCI Index Profile Tool. For mandatory and voluntary metrics listed in sections 2.1.1 to 2.1.4, the calculation rules are also explained in detail in sections 3.2.1.1 and 3.2.1.2 below.

3.2.1.1   Equity and Corporate Bond Indexes

Metric Name	Metric Calculation
Board Gender Diversity	$$\sum_{i=1}^{n}(Weight_i \times CORP\_GOV\_PCT\_WOMEN\_BOARD_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with female board members percentage available • $Weight_i$ = closing index weight for security i • $CORP\_GOV\_PCT\_WOMEN\_BOARD_i$ = Female board members percentage of security i's issuer
Board Independence	$$\sum_{i=1}^{n}(Weight_i \times BOARD\_INDEP\_PCT_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with Board independence percentage available • $Weight_i$ = closing index weight for security i • $BOARD\_INDEP\_PCT_i$ = Board independence percentage of security i's issuer
Bribery & Corruption Convictions	$$\sum_{i=1}^{n}(Weight_i \times CORR\_BRIB\_CONVICTIONS_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $CORR\_BRIB\_CONVICTIONS_i$ = Total number of convictions for violation of anti-corruption and anti-bribery laws for security i
Bribery & Corruption Fines	$$\sum_{i=1}^{n}(Weight_i \times CORR\_BRIB\_FINES_i) / 1000000$$ Where: • i = index security • $Weight_i$ = closing index weight for security i

	• *CORR_BRIB_FINES$_i$* = Total amount of fines (in USD) for convictions relating to violation of anti-corruption and anti-bribery laws for security i
Controversial Weapons	$$\sum_{i=1}^{n}(Weight_i \times Controversial\ Weapons\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • *i* = index security • *Weight$_i$* = closing index weight for security i • *Controversial Weapons Factor$_i$* = Controversial weapons factor for security i ○ Equals to 1 if security i has ties to controversial weapons (*CWEAP_TIE$_i$* = 'True'), otherwise equals to 0

Decarbonization %	This metric is calculated at each Index Review of the index, and is not updated between Index Reviews. $$1 - \left(\frac{W_t}{W_1}\right)^{\frac{f}{(t-1)}}$$ Where:
	• *t* = number of Index Reviews, including the index Base Date which corresponds to *t*=1.
	• *f* = Index Review frequency
	    ○ semi-annual: *f* = 2
	    ○ quarterly: *f* = 4
	    ○ monthly: *f* = 12
	• *W$_t$* = Inflation-adjusted Enterprise Carbon Intensity (t CO2/$M EVIC) as of t
	• *W$_1$* = Inflation-adjusted Enterprise Carbon Intensity (t CO2/$M EVIC) as of index Base Date

Environmental Pillar Score	$$\sum_{i=1}^{n}(Weight_i \times ENVIRONMENTAL\_PILLAR\_WEIGHT_i \times ENVIRONMENTAL\_PILLAR\_SCORE_i) / \sum_{i=1}^{n}(Weight_i \times ENVIRONMENTAL\_PILLAR\_WEIGHT_i)$$ Where: • *i* = index security with Environmental Pillar Score available • *Weight$_i$* = closing index weight for security i • *ENVIRONMENTAL_PILLAR_WEIGHT$_i$* = Environmental pillar weight of security i • *ENVIRONMENTAL_PILLAR_SCORE$_i$* = Environmental pillar score of security i
ESG Score	$$\sum_{i=1}^{n}(Weight_i \times INDUSTRY\_ADJUSTED\_SCORE_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • *i* = index security with ESG score available • *Weight$_i$* = closing index weight for security i • *INDUSTRY_ADJUSTED_SCORE$_i$* = ESG score of security i

Estimated Emissions	$$\sum_{i=1}^{n}(Weight_i \times Estimated\ Emissions\ Factor_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $Estimated\ Emissions\ Factor_i$ = estimated emissions factor for security i • Equals to 1 if security i's issuer has estimated emissions ($CARBON\_EMISSIONS\_SCOPE\_12\_KEY_i$ <> 'Reported') and both $CARBON\_EMISSIONS\_SCOPE\_12\_KEY_i$ and $EVIC_i$ are available, otherwise equals to 0 • $EVIC_i$ = Company enterprise value including cash for security i's issuer (in EUR million)
Female: Male Board Diversity Ratio	$$\sum_{i=1}^{n}(Weight_i \times FM\_BOARD\_RATIO_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with female board members percentage available • $Weight_i$ = closing index weight for security i • $FM\_BOARD\_RATIO_i$ = Female-to-male board members ratio of security i's issuer
Fossil Fuel-Based Sector Exposure (NACE)	$$\sum_{i=1}^{n}(Weight_i \times FF\ Sector\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $FF\ Sector\ Factor_i$ = fossil fuel-based sector factor for security i o Equals to 1 if security i has a GICS® classification that indicates fossil fuel-based sector exposure, otherwise equals to 0 On each date that the calculation is performed, the set of GICS® Sub-Industries that indicate fossil fuel-based sector exposure is derived as follows: • First, the fossil fuel-based sector classifications as defined by the EU Delegated Act (i.e., NACE classifications from Divisions 05 to 09, 19 and 20 of Annex I to Regulation (EC) No 1893/2006) are mapped to the GICS® Sub-Industries using the GICS® to NACE mapping[17] • Second, the mapped GICS® Sub-Industries are filtered to remove GICS® Sub-Industries with more than 80% weight in the Solutions and Neutral categories of the Low Carbon Transition framework

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[17] This mapping is available in the Handbook of Climate Transition Benchmarks, Paris-Aligned Benchmark and Benchmarks' ESG Disclosures. Please note that the mapping does not reflect changes in the GICS structure that were implemented in the MSCI indexes on June 1, 2023.

	The 80% threshold will be reviewed and adjusted as necessary each time there is a relevant change in the GICS® and/or NACE methodologies or mapping, or a change in the Low Carbon Transition methodology.
Gender Pay Gap	$$\sum_{i=1}^{n}(Weight_i \times GENDER\ PAY\ GAP\ RATIO_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with gender pay gap ratio available • $Weight_i$ = closing index weight for security i • $GENDER\ PAY\ GAP\ RATIO_i$ = Gender pay gap ratio (as defined in section 2.1) for security i's issuer
Governance Pillar Score	$$\sum_{i=1}^{n}(Weight_i \times GOVERNANCE\_PILLAR\_WEIGHT_i \times GOVERNANCE\_PILLAR\_SCORE_i)$$ $$/ \sum_{i=1}^{n}(Weight_i \times GOVERNANCE\_PILLAR\_WEIGHT_i)$$ Where: • i = index security with Governance Pillar Score available • $Weight_i$ = closing index weight for security i • $GOVERNANCE\_PILLAR\_WEIGHT_i$ = Governance pillar weight of security i • $GOVERNANCE\_PILLAR\_SCORE_i$ = Governance pillar score of security i
Green Bonds	This metric is calculated for MSCI Fixed Income Indexes only. $$\sum_{i=1}^{n}(Weight_i \times Green\ Bond\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $Green\ Bond\ Factor_i$ = Green bond factor for security i ○ Equals to 1 if security i meets the relevant green bond criteria ($GB\_ELIGIBLE_i$ = 'True'), otherwise equals to 0
Green Capex	$$\sum_{i=1}^{n}(Weight_i \times RENEW\_ENERGY\_CAPEX\_VS\_TOTAL\_CAPEX\_PCT_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $RENEW\_ENERGY\_CAPEX\_VS\_TOTAL\_CAPEX\_PCT_i$ = Capital expenditure in renewable power generation assets as a proportion of total company capital expenditure for security i
Green Revenue	$$\sum_{i=1}^{n}(Weight_i \times CT\_TOTAL\_MAX\_REV_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $CT\_TOTAL\_MAX\_REV_i$ = Clean tech revenue for security i

High Climate Impact Sector Exposure	$$\sum_{i=1}^{n}(Weight_i \times High\ Climate\ Impact\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$
	
	Where:
	• i = index security
	• $Weight_i$ = closing index weight for security i
	• $High\ Climate\ Impact\ Factor_i$ = High climate impact factor for security i
	    ○ Equals to 1 if security i has a GICS® classification that indicates High climate impact sector exposure, otherwise equals to 0
	    ○ To determine if a GICS® classification indicates High climate impact sector exposure, the High climate impact sector classifications as defined by the EU Delegated Act (i.e., NACE sectors listed in Sections A to H and Section L of Annex I to Regulation (EC) No 1893/2006) are mapped to the GICS® Sub-Industries using the GICS® to NACE mapping[18]

Lack of Due Diligence Policy (ILO)	$$\sum_{i=1}^{n}(Weight_i \times ILO\ Due\ Diligence\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $ILO\ Due\ Diligence\ Factor_i$ = ILO due diligence factor for security i ○ Equals to 1 if $ILO\_DD\_POLICY_i$ = 'No Evidence', or if $ILO\_DD\_POLICY_i$ is blank and $LABOR\_POLICY\_INTL\_RECOGNIZED\_M_i$ = 'No'. Otherwise equals to 0
Overlap between the benchmark and its investable universe (using the active share at asset level)	This metric is calculated at each Index Review of the index, and not updated between Index Reviews. $$\left[\sum_{i=1}^{n} Abs\ (Weight\ Universe_i - Weight_i)\right] / 2$$ Where: • i = index security • $Weight\ Universe_i$ = closing weight for security i in the relevant market capitalization weighted index based on the MSCI Global Investable Market Indexes (GIMI) methodology that corresponds to the "investable universe" of the PAB/CTB index (as defined in article 1(e) of Commission Delegated Regulation (EU) 2020/1818). In case the parent index is following the GIMI methodology, the "investable universe" is the parent index. In case the parent index is not following the GIMI methodology, the methodology of the parent index defines the next-higher parent index(es) including the GIMI index on which the parent is constructed. • $Weight_i$ = closing index weight for security i

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[18] This mapping is available in the Handbook of Climate Transition Benchmarks, Paris-Aligned Benchmark and Benchmarks' ESG Disclosures. Please note that the mapping does not reflect changes in the GICS structure that were implemented in the MSCI indexes on June 1, 2023.

Physical Risk Climate VaR	$$\sum_{i=1}^{n}(Weight_i \times PHYSICAL\ RISK\ CLIMATE\ VAR_i)\ /\ \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with extreme weather Climate VaR available • $Weight_i$ = closing index weight for security i • $PHYSICAL\ RISK\ CLIMATE\ VAR_i$ = extreme weather Climate VaR – aggressive scenario (as defined in section 2.1) for security i
Reported Emissions	$$\sum_{i=1}^{n}(Weight_i \times Reported\ Emissions\ Factor_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $Reported\ Emissions\ Factor_i$ = reported emissions factor for security i o Equals to 1 if security i's issuer has reported emissions ($CARBON\_EMISSIONS\_SCOPE\_12\_KEY_i$ = 'Reported') and $EVIC_i$ is available, otherwise equals to 0 • $EVIC_i$ = Company enterprise value including cash for security i's issuer (in EUR million)
Social Pillar Score	$$\sum_{i=1}^{n}(Weight_i \times SOCIAL\_PILLAR\_WEIGHT_i \times SOCIAL\_PILLAR\_SCORE_i)$$ $$/\sum_{i=1}^{n}(Weight_i \times SOCIAL\_PILLAR\_WEIGHT_i)$$ Where: • i = index security with Social Pillar Score available • $Weight_i$ = closing index weight for security i • $SOCIAL\_PILLAR\_WEIGHT_i$ = Social pillar weight of security i • $SOCIAL\_PILLAR\_SCORE_i$ = Social pillar score of security i
Social Violations (Count)	$$\sum_{i=1}^{n}(Social\ Violations\ Factor_i)$$ Where: • i = index security • $Social\ Violations\ Factor_i$ = Social violations factor for security i o Equals to 1 if security i has Red Flag social controversies ($SOCIAL\_CONTROVERSY\_SCORE_i$ = 0), otherwise equals to 0
Social Violations (% Constituents)	$$\sum_{i=1}^{n}(Social\ Violations\ Factor_i)\bigg/\sum_{i=1}^{n}(i)$$ Where: • i = index security • $Social\ Violations\ Factor_i$ = Social violations factor for security i o Equals to 1 if security i has Red Flag social controversies ($SOCIAL\_CONTROVERSY\_SCORE_i$ = 0), otherwise equals to 0

Tobacco – Producer – Any Revenue	$$\sum_{i=1}^{n}(Weight_i \times Tobacco\ Producer\ Screen_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $Tobacco\ Producer\ Screen_i$ = 1 if $TOB\_PRODUCER_i$ = 'True', otherwise equals to 0
Total Recordable Injury Rate	$$\sum_{i=1}^{n}(Weight_i \times TRIR_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with total recordable injury rate available • $Weight_i$ = closing index weight for security i • $TRIR_i$ = Total recordable injury rate per million hours worked (as defined in section 2.1) for security i's issuer
Weighted Average Carbon Intensity by Sales - Scope 1 + 2 + 3	$$\sum_{i=1}^{n}(Weight_i \times (CARBON\_EMISSIONS\_SCOPE\_12_i + CARBON\_EMISSIONS\_SCOPE\_3\_TOTAL_i) / SALES_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with both Carbon emissions (scope 1, 2 and 3) and Sales available • $Weight_i$ = closing index weight for security i • $CARBON\_EMISSIONS\_SCOPE\_12_i$ = scope 1 and 2 carbon emissions of security i's issuer (in t CO2) • $CARBON\_EMISSIONS\_SCOPE\_3\_TOTAL_i$ = Estimated scope 3 emissions (total) as defined by the Greenhouse Gas Protocol (in t CO2) of security i's issuer • $SALES_i$ = Company sales for security i's issuer (in USD million)

3.2.1.2   *Sovereign Bond Indexes*

Metric Name	Metric Calculation
International Convention Signatory (%) - Sovereign	$$\sum_{i=1}^{n}(Weight_i \times Signatory\ Convention\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $Signatory\ Convention\ Factor_i$ = Signatory Convention Factor for security i equals to 1 if security i meets at least 7 of the following international conventions, otherwise equals to 0 ▪ Basel Convention (GOVERNMENT_BASEL_CONVENTION = "Yes" or "Yes, but did not subscribe to Nagoya Supplement")

	- Biological Diversity Convention (GOVERNMENT_CONV_BIO_DIVERSITY = "Yes" or "Yes, but did not subscribe to Nagoya Supplement") - Convention on International Trade in Endangered Species of Wild Fauna and Flora (GOVERNMENT_CONV_ENDANGERED_SPECIES = "Yes" or "Yes, but did not subscribe to Nagoya Supplement") - Kyoto Protocol (GOVERNMENT_KYOTO_PROTOCOL = "Yes" or "Yes, but did not subscribe to Nagoya Supplement") - Anti-Personnel Landmines Convention (GOVERNMENT_MINE_BAN_TREATY = "Yes" or "Yes, but did not subscribe to Nagoya Supplement") - Biological Weapon Convention (GOVERNMENT_BIO_WEAPONS = "Yes" or "Yes, but did not subscribe to Nagoya Supplement") - Chemical Weapon Convention (GOVERNMENT_CHEM_WEAPONS = "Yes" or "Yes, but did not subscribe to Nagoya Supplement") - Convention against Torture and other cruel, inhuman or degrading treatment or punishment (GOVERNMENT_CONV_TORTURE = "Yes" or "Yes, but did not subscribe to Nagoya Supplement") - Convention on Certain Conventional Weapons (GOVERNMENT_CONVENTIONAL_WEAPONS = "Yes" or "Yes, but did not subscribe to Nagoya Supplement") - Convention on Cluster Munitions (GOVERNMENT_CLUSTER_MUNITIONS = "Yes" or "Yes, but did not subscribe to Nagoya Supplement") - Convention for the protection of all persons from enforced disappearance (GOVERNMENT_CONV_PROTECT_PERSONS = "Yes" or "Yes, but did not subscribe to Nagoya Supplement") - United Nations Convention against Corruption (GOVERNMENT_UN_CONVEN_CORRUP = "Yes" or "Yes, but did not subscribe to Nagoya Supplement") - United Nations Convention against Transnational Orgnized Crime (GOVERNMENT_UN_CONVEN_CRIME = "Yes" or "Yes, but did not subscribe to Nagoya Supplement") - World Health Organization Framework Convention on Tobacco Control (GOVERNMENT_WHO_TOBACCO_CTRL = "Yes" or "Yes, but did not subscribe to Nagoya Supplement")
Wtd Avg GHG Intensity (t/USD million GDP nominal) - Sovereign	$$\sum_{i=1}^{n}\left(Weight_i \times \text{CARBON\_GOVERNMENT\_GHG\_INTENSITY\_GDP\_TONPERMN}_i\right)$$ $$/\sum_{i=1}^{n}(Weight_i)$$ Where:

	• *i* = index security • *Weight$_i$* = closing index weight for security i • CARBON_GOVERNMENT_GHG_INTENSITY_GDP_TONPERMN *$_i$* = GHG intensity of security I (in tons per USD million GDP nominal).
Reported Emissions (%) - Sovereign	MSCI ESG Research only estimates the Carbon Emissions Intensity of sovereign bonds and hence the reported emissions are always 0%
Estimated Emissions (%) - Sovereign	$$\sum_{i=1}^{n}(Weight_i \times Estimated\ Emissions\ Factor_i)$$ Where: • *i* = index security • *Weight$_i$* = closing index weight for security i • *Estimated Emissions Factor$_i$* = estimated emissions factor for security i equals to 1 if security i's issuer has reported emissions (CARBON_GOVERNMENT_GHG_INTENSITY_GDP_TONPERMN$_i$ is not null), otherwise equals to 0
Green Bonds (%) - Sovereign	$$\sum_{i=1}^{n}(Weight_i \times Green\ Bond\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • *i* = index security • *Weight$_i$* = closing index weight for security i • *Green Bond Factor$_i$* = Green bond factor for security i equals to 1 if security i meets the relevant green bond criteria (*GB_ELIGIBLE$_i$* = 'True'), otherwise equals to 0
Social Violations (Count) - Sovereign	$$\sum_{i=1}^{n}(Social\ Violations\ Issuer_i)$$ Where: • *i* = unique index issuer • *Social Violations Factor$_i$* = Social violations factor for issuer i equals to 1 if issuer i is alleged to be involved in human rights violations and abuses subject to EU sanctions (*GOVERNMENT_EU_SANCTIONS$_i$* = 'Yes'), otherwise equals to 0
Social Violations (% of Constituents) - Sovereign	$$\sum_{i=1}^{n}(Social\ Violations\ Factor_i) \bigg/ \sum_{i=1}^{n}(i)$$ Where: • *i* = unique index issuer • *Social Violations Factor$_i$* = Social violations factor for issuer i equals to 1 if issuer i is alleged to be involved in human rights violations and abuses subject to EU sanctions (*GOVERNMENT_EU_SANCTIONS$_i$* = 'Yes'), otherwise equals to 0
Human Rights Performance - Sovereign	$$\sum_{i=1}^{n}(Weight_i \times GOVERNMENT\_FUNDAMENTAL\_RIGHTS_i) / \sum_{i=1}^{n}(Weight_i)$$ Where:

	i = index security *Weight$_i$* = closing index weight for security i $GOVERNMENT\_FUNDAMENTAL\_RIGHTS_i$ = WJP Rule of Law Index, Fundamental Rights Sub-score for security i
Income Inequality Score - Sovereign	$$\sum_{i=1}^{n}(Weight_i \times GOVERNMENT\_RAW\_GINI_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: i = index security *Weight$_i$* = closing index weight for security i $GOVERNMENT\_RAW\_GINI_i$ = GINI Index for security i
Press Freedom Sovereign Score - Sovereign	$$\sum_{i=1}^{n}(Weight_i \times GOVERNMENT\_RAW\_PRESS\_FREED_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: i = index security *Weight$_i$* = closing index weight for security i $GOVERNMENT\_RAW\_PRESS\_FREED_i$ = World Press Freedom Index for security i
Corruption Score - Sovereign	$$\sum_{i=1}^{n}(Weight_i \times GOVERNMENT\_RAW\_CORR\_PERC\_INDEX_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: i = index security *Weight$_i$* = closing index weight for security i $GOVERNMENT\_RAW\_CORR\_PERC\_INDEX_i$ = Corruption Perception Index for security i
Stability & Peace Score - Sovereign	$$\sum_{i=1}^{n}(Weight_i \times GOVERNMENT\_STABILITY\_PEACE\_SCORE_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: i = index security *Weight$_i$* = closing index weight for security i $GOVERNMENT\_STABILITY\_PEACE\_SCORE_i$ = Stability & Peace Score for security i
Rule of Law Score - Sovereign	$$\sum_{i=1}^{n}(Weight_i \times GOVERNMENT\_RAW\_RULE\_OF\_LAW_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: i = index security *Weight$_i$* = closing index weight for security i $GOVERNMENT\_RAW\_RULE\_OF\_LAW_i$ = Rule of law Index for security i

3.2.2 SFDR Mandatory Metrics (Equity and Corporate Bond Indexes)

Metric Name	Metric Calculation
Carbon Footprint (Scope 1+2+3)	$$\sum_{i=1}^{n}(Weight_i \times (CARBON\_EMISSIONS\_SCOPE\_12_i + CARBON\_EMISSIONS\_SCOPE\_3\_TOTAL_i) / EVIC_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with both Carbon emissions (scope 1, 2 and 3) and EVIC available • $Weight_i$ = closing index weight for security i • $CARBON\_EMISSIONS\_SCOPE\_12_i$ = scope 1 and 2 carbon emissions of security i's issuer (in t CO2) • $CARBON\_EMISSIONS\_SCOPE\_3\_TOTAL_i$ = Estimated scope 3 emissions (total) as defined by the Greenhouse Gas Protocol (in t CO2) of security i's issuer • $EVIC_i$ = Company enterprise value including cash for security i's issuer (in EUR million)
Carbon Footprint (Scope 1)	$$\sum_{i=1}^{n}(Weight_i \times (CARBON\_EMISSIONS\_SCOPE\_1_i) / EVIC_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with both Carbon emissions (scope 1) and EVIC available • $Weight_i$ = closing index weight for security i • $CARBON\_EMISSIONS\_SCOPE\_1_i$ = scope 1 carbon emissions of security i's issuer (in t CO2) • $EVIC_i$ = Company enterprise value including cash for security i's issuer (in EUR million)
Carbon Footprint (Scope 2)	$$\sum_{i=1}^{n}(Weight_i \times (CARBON\_EMISSIONS\_SCOPE\_2_i) / EVIC_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with both Carbon emissions (scope 2) and EVIC available • $Weight_i$ = closing index weight for security i • $CARBON\_EMISSIONS\_SCOPE\_2_i$ = scope 2 carbon emissions of security i's issuer (in t CO2) • $EVIC_i$ = Company enterprise value including cash for security i's issuer (in EUR million)
Carbon Footprint (Scope 3)	$$\sum_{i=1}^{n}(Weight_i \times (CARBON\_EMISSIONS\_SCOPE\_3\_TOTAL_i) / EVIC_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with both Carbon emissions (scope 3) and EVIC available • $Weight_i$ = closing index weight for security i

- $CARBON\_EMISSIONS\_SCOPE\_3\_TOTAL_i$ = Estimated scope 3 emissions (total) as defined by the Greenhouse Gas Protocol (in t CO2) of security i's issuer
- $EVIC_i$ = Company enterprise value including cash for security i's issuer (in EUR million)

Carbon Footprint (Scope 1+2)	$$\sum_{i=1}^{n}(Weight_i \times (CARBON\_EMISSIONS\_SCOPE\_12_i)\ /\ EVIC_i)\ /\ \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with both Carbon emissions (scope 1 and 2) and EVIC available • $Weight_i$ = closing index weight for security i • $CARBON\_EMISSIONS\_SCOPE\_12_i$ = scope 1 and 2 carbon emissions of security i's issuer (in t CO2) • $EVIC_i$ = Company enterprise value including cash for security i's issuer (in EUR million)
GHG Intensity of Investee Companies	$$\sum_{i=1}^{n}(Weight_i$$ $$\times (CARBON\_EMISSIONS\_SCOPE\_12_i + CARBON\_EMISSIONS\_SCOPE\_3\_TOTAL_i)$$ $$/\ SALES_i)\ /\ \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with both Carbon emissions (scope 1, 2 and 3) and Sales available • $Weight_i$ = closing index weight for security i • $CARBON\_EMISSIONS\_SCOPE\_12_i$ = scope 1 and 2 carbon emissions of security i's issuer (in t CO2) • $CARBON\_EMISSIONS\_SCOPE\_3\_TOTAL_i$ = Estimated scope 3 emissions (total) as defined by the Greenhouse Gas Protocol (in t CO2) of security i's issuer • $SALES_i$ = Company sales for security i's issuer (in EUR million)
Exposure to companies active in fossil fuel sector %	$$\sum_{i=1}^{n}(Weight_i \times Active\ Fossil\ Fuel\ Sector\ Exposure\ Factor_i)\ /\ \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $Active\ Fossil\ Fuel\ Sector\ Exposure\ Factor_i$ = Active Fossil Fuels Sector Exposure factor for security i o Equals to 1 if security i's issuer has exposure to oil and gas and thermal coal related revenue generating activities ($ACTIVE\_FF\_SECTOR\_EXPOSURE_i$ = 'True'), otherwise equals to 0
Share of non-renewable energy consumption and production %	$$\sum_{i=1}^{n}(Weight_i \times PCT\_NONRENEW\_CONSUMP\_PROD_i)\ /\ \sum_{i=1}^{n}(Weight_i)$$ Where:

	• i = index security with % non-renewable energy consumption and production available • *Weight$_i$* = closing index weight for security i • *PCT_NONRENEW_CONSUMP_PROD* i = Percentage of non-renewable energy consumption and production of security i
Energy consumption intensity per high impact climate sector	$$\sum_{i=1}^{n}(Weight_i \times ENERGY\_CONSUMP\_INTEN\_EUR_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security that belong to High Climate Impact sector • *Weight$_i$* = renormalized closing index weight for security i, for sub-portfolio of all securities classified in High Climate Impact Sector To determine if a GICS® classification indicates High climate impact sector exposure, the High climate impact sector classifications as defined by the EU Delegated Act (i.e., NACE sectors listed in Sections A to H and Section L of Annex I to Regulation (EC) No 1893/2006) are mapped to the GICS® Sub-Industries using the GICS® to NACE mapping[19]
Activities negatively affecting biodiversity - sensitive areas	$$\sum_{i=1}^{n}(Weight_i \times Negative\ Biodiversity\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security • *Weight$_i$* = closing index weight for security i • *Negative Biodiversity Factor$_i$* = Negative biodiversity factor for security i ○ Equals to 1 if security i's issuer is involved in activities which negatively affect biodiversity sensitive areas (*OPS_PROT_BIODIV_CONTROVS$_i$* = 'Yes'), otherwise equals to 0
Emissions to water	$$\sum_{i=1}^{n}(Weight_i \times (WATER\_EM\_EFF\_METRIC\_TONS_i) / EVIC_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with both Emissions to water and EVIC available • *Weight$_i$* = closing index weight for security i • *WATER_EM_EFF_METRIC_TONS$_i$* = Total tons of pollutants released to surface waters as a result of companies' operations • *EVIC$_i$* = Company enterprise value including cash for security i's issuer (in EUR million)
Hazardous Waste Ratio	$$\sum_{i=1}^{n}(Weight_i \times (HAZARD\_WASTE\_METRIC\_TON_i) / EVIC_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with both Emissions to water and EVIC available • *Weight$_i$* = closing index weight for security i • *HAZARD_WASTE_METRIC_TON$_i$* = Total hazardous waste (metric tons)

[19] This mapping is available in the Handbook of Climate Transition Benchmarks, Paris-Aligned Benchmark and Benchmarks' ESG Disclosures. Please note that the mapping does not reflect changes in the GICS structure that were implemented in the MSCI indexes on June 1, 2023.

	• $EVIC_i$ = Company enterprise value including cash for security i's issuer (in EUR million)
Violations of UN Global Compact principles and Organisation for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises	$$\sum_{i=1}^{n}(Weight_i \times Very\ Severe\ Controversies\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with ESG score available • $Weight_i$ = closing index weight for security i • *Red Flag ESG Controversies Factor$_i$* = Red Flag ESG controversies factor for security i ○ Equals to 1 if security i is flagged for a Red Flag ESG controversy (*OVERALL_FLAG$_i$* = 'Red'), otherwise equals to 0
Lack of processes and compliance mechanisms to monitor compliance with UN Global Compact principles and OECD Guidelines for Multinational Enterprises %	$$\sum_{i=1}^{n}(Weight_i \times UNGC\ Compliance\ Mechanisms\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • *UNGC Compliance Mechanisms Factor$_i$* = UNGC Compliance mechanisms factor for security i ○ Equals to 1 if security i's issuers with no evidence for being signatory to the UN Global Compact and being required to monitor and report compliance with the UN Global Compact principles (*MECH_UN_GLOBAL_COMPACT$_i$* = 'No evidence'), otherwise equals to 0
Unadjusted Gender Pay Gap %	$$\sum_{i=1}^{n}(Weight_i \times GENDER\ PAY\ GAP\ RATIO_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with gender pay gap ratio available • $Weight_i$ = closing index weight for security i • *GENDER PAY GAP RATIO$_i$* = Gender pay gap ratio (as defined in section 2.1) for security i's issuer
Board Gender Diversity %	$$\sum_{i=1}^{n}(Weight_i \times CORP\_GOV\_PCT\_WOMEN\_BOARD_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security with female board members percentage available • $Weight_i$ = closing index weight for security i • *CORP_GOV_PCT_WOMEN_BOARD$_i$* = Female board members percentage of security i's issuer
Exposure to controversial weapons %	$$\sum_{i=1}^{n}(Weight_i \times SFDR\ Controversial\ Weapons\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i

	• *SFDR Controversial Weapons Factor$_i$* = SFDR controversial weapons factor for security i o Equals to 1 if security i has ties to cluster munitions, landmines, biological/chemical weapons (*CONTRO_WEAP_CBLMBW_ANYTIE$_i$* = 'True'), otherwise equals to 0

3.2.3 Other Metrics

Metric Name	Metric Calculation
Baseline Criteria Test (% Fail)	$$\sum_{i=1}^{n}(Weight_i \times Baseline\ Criteria\ Fail\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • *i* = index security • *Weight$_i$* = closing index weight for security i • Baseline Criteria Fail Factor$_i$ = Baseline Criteria test (%SI) factor for security i o Equals to 1 if security fails DNSH or Good Governance criteria (*EU_SI_DNSH_TEST* <> 'Pass' OR *EU_SI_GOOD_GOV_TEST* <> 'Pass'), otherwise equals to 0
Economic Activities Test	$$\sum_{i=1}^{n}(Weight_i \times Economic\ Activities\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • *i* = index security • *Weight$_i$* = closing index weight for security i • Economic Activities Factor$_i$ = Economic Activities factor for security i o Equals to 1 if security i has more than 20% revenues from environmental or social themes (*EU_SI_ECONOMIC_ACT_TEST* = 'Pass'), otherwise equals to 0
Estimated Environmental Impact Involvement (%)	$$\sum_{i=1}^{n}(Weight_i \times EU\_SI\_ENV\_IMPACT\_REV_i)$$ Where: • *i* = index security • *Weight$_i$* = closing index weight for security i • *EU_SI_ENV_IMPACT_REV$_i$* = Estimated environmental Impact revenue for security i
Estimated EU Taxonomy % Alignment	$$\sum_{i=1}^{n}(Weight_i \times EST\_EU\_TAXONOMY\_MAX\_REV_i)$$ Where: • *i* = index security • *Weight$_i$* = closing index weight for security i

	• *EST_EU_TAXONOMY_MAX_REV$_i$* = Estimated impact revenue for security i
EU Taxonomy Reported Non-Financial - Total Aligned OpEx (%)	$$\sum_{i=1}^{n}\left(Weight_i \times REP\_EU\_TAXONOMY\_OPEX\_ALIGNED_i\right)$$ Where: • *i* = index security • *Weight$_i$* = closing index weight for security i • *REP_EU_TAXONOMY_OPEX_ALIGNED$_i$* = percentage of total operational expenditure from aligned activities for security i
EU Taxonomy Reported Non-Financial - Total Aligned CapEx (%)	$$\sum_{i=1}^{n}\left(Weight_i \times REP\_EU\_TAXONOMY\_CAPEX\_ALIGNED_i\right)$$ Where: • *i* = index security • *Weight$_i$* = closing index weight for security i • *REP_EU_TAXONOMY_CAPEX_ALIGNED$_i$* = Percentage of total capital expenditure from aligned activities for security i
EU Taxonomy Reported - Eligible Aligned Gas Turnover (%)	$$\sum_{i=1}^{n}\left(Weight_i \times REP\_EU\_TAXONOMY\_ELIGIBLE\_ALIGNED\_GAS\_TURNOVER_i\right)$$ Where: • *i* = index security • *Weight$_i$* = closing index weight for security i • *REP_EU_TAXONOMY_ELIGIBLE_ALIGNED_GAS_TURNOVER$_i$* = Percentage of Turnover aggregated to taxonomy eligible and aligned gas activities for security i
EU Taxonomy Reported - Eligible Aligned Gas CapEx (%)	$$\sum_{i=1}^{n}\left(Weight_i \times REP\_EU\_TAXONOMY\_ELIGIBLE\_ALIGNED\_GAS\_CAPEX_i\right)$$ Where: • *i* = index security • *Weight$_i$* = closing index weight for security i • *REP_EU_TAXONOMY_ELIGIBLE_ALIGNED_GAS_CAPEX$_i$* = Percentage of total capital expenditure aggregated to taxonomy eligible and aligned gas activities for security i
EU Taxonomy Reported - Eligible Aligned Gas OpEx (%)	$$\sum_{i=1}^{n}\left(Weight_i \times REP\_EU\_TAXONOMY\_ELIGIBLE\_ALIGNED\_GAS\_OPEX_i\right)$$ Where: • *i* = index security • *Weight$_i$* = closing index weight for security i • *REP_EU_TAXONOMY_ELIGIBLE_ALIGNED_GAS_OPEX$_i$* = Percentage of total operational expenditure aggregated to taxonomy eligible and aligned gas activities for security i

EU Taxonomy Reported - Eligible Aligned Nuclear Turnover (%)	$$\sum_{i=1}^{n}(Weight_i \times REP\_EU\_TAXONOMY\_ELIGIBLE\_ALIGNED\_NUCLEAR\_TURNOVER_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $REP\_EU\_TAXONOMY\_ELIGIBLE\_ALIGNED\_NUCLEAR\_TURNOVER_i$ = Percentage of Turnover aggregated to taxonomy eligible and aligned nuclear activities for security i
EU Taxonomy Reported - Eligible Aligned Nuclear CapEx (%)	$$\sum_{i=1}^{n}(Weight_i \times REP\_EU\_TAXONOMY\_ELIGIBLE\_ALIGNED\_NUCLEAR\_CAPEX_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $REP\_EU\_TAXONOMY\_ELIGIBLE\_ALIGNED\_NUCLEAR\_CAPEX_i$ = Percentage of total capital expenditure aggregated to taxonomy eligible and aligned nuclear activities for security i
EU Taxonomy Reported - Eligible Aligned Nuclear OpEx (%)	$$\sum_{i=1}^{n}(Weight_i \times REP\_EU\_TAXONOMY\_ELIGIBLE\_ALIGNED\_NUCLEAR\_OPEX_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $REP\_EU\_TAXONOMY\_ELIGIBLE\_ALIGNED\_NUCLEAR\_OPEX_i$ = Percentage of total operational expenditure aggregated to taxonomy eligible and aligned nuclear activities for security i
Estimated Social Impact Involvement (%)	$$\sum_{i=1}^{n}(Weight_i \times EU\_SI\_SOC\_IMPACT\_REV_i)$$ Where: • i = index security • $Weight_i$ = closing index weight for security i • $EU\_SI\_SOC\_IMPACT\_REV_i$ = Estimated social Impact revenue for security i
Implied Temperature Rise	**Step 1: Compute "Ownership"** The ownership per index security 'i' is computed as follows: Security Ownership$_i$ = (Security Index Market Capitalization$_i$) / (EVIC$_i$) **Step 2: Compute Financed Budget** The financed budget per index security 'i' is computed as follows: Financed Budget$_i$ = Ownership$_i$ * TOTAL_BUDGET$_i$ **Step 3: Compute Financed Overshoot** The financed overshoot per index security 'i' is computed as follows: Financed Overshoot$_i$ = Ownership$_i$ * TOTAL_OVERSHOOT$_i$ **Step 4: Implied Temperature Rise** Using the financed overshoot and financed budget calculated in the above steps, the Implied Temperature Rise of the index is calculated as given below:

	Implied Temperature Rise = $$BASE\_TEMP + \frac{\sum(TCRE * GLOBAL\_BUDGET_{reference\ year,i} * Financed\ Overshoot_i)_i}{\sum Financed\ Budgets_i}$$ Where: • i = index security • *Security Index Market Capitalization$_i$* = closing index market capitalization for security i • *EVIC$_i$* = Company enterprise value including cash for security i's issuer (in USD) • *TOTAL_BUDGET$_i$* = Cumulative Net Zero 2050 Carbon Budget that remains available for security i's issuer • *TOTAL_OVERSHOOT$_i$* = Projected GHG emission overshoot/undershoot for security i's issuer • *GLOBAL_BUDGET$_{refernce\ year,\ i}$* = The remaining total greenhouse gases available globally to limit global warming to 1.55°C by 2050, for security i's issuer as of the reference year for which security i was covered in the latest assessment. • *TCRE* = The Transient Response to Cumulative CO2 Emissions (TCRE) Factor defines the relationship beween the absolute additional emissions and temperature increase. The Implied Temperature Rise value resulting from the above formula is rounded up, with one decimal digit precision. Refer to Appendix II for more details.
Sustainable Investment Test %	$$\sum_{i=1}^{n}(Weight_i \times Sustainable\ Investment\ Factor_i) / \sum_{i=1}^{n}(Weight_i)$$ Where: • i = index security • *Weight$_i$* = closing index weight for security i • *Sustainable Investment Factor$_i$* = Sustainable Investment (%SI) factor for security i ◦ Equals to 1 if security i passes the Sustainable Investment test (*EU_SUSTAINABLE_INVESTMENT_SCREEN* = 'Pass'), otherwise equals to 0

3.2.4 Percentage of Coverage

For some metrics, MSCI discloses the corresponding percentage of coverage of the underlying ESG data used for the ESG metric calculation.

The percentage of coverage is derived by dividing the number of index constituent securities that have underlying ESG data available with the total number of index constituent securities.

For example, the percentage of coverage for the ESG Score metric is calculated as follows:

$$\frac{Number\ of\ index\ constituent\ securities\ with\ INDUSTRY\_ADJUSTED\_SCORE\ available}{Total\ number\ of\ index\ constituent\ securities}$$

Where:

- *INDUSTRY_ADJUSTED_SCORE$_i$* = ESG score of security i

4 Maintenance of Metrics

4.1 Ongoing Review and Publication

The ESG and SFDR metrics are calculated once a month using end of month data, as described in section 3.1.

4.2 Correction Policy

In certain circumstances, such as errors in the calculation of the metrics or in the input data used for the calculation, MSCI reserves the right to correct the ESG metrics information. Such cases will be reflected in the Benchmark Regulation ESG Disclosures Correction Log available on the MSCI Index Profile Tool.

5   MSCI ESG Research

The following MSCI ESG Research products are used for the calculation of ESG metrics: MSCI ESG Ratings, MSCI ESG Controversies, MSCI ESG Business Involvement Screening Research, MSCI Climate Change Metrics, MSCI ESG Sustainable Impact Metrics, MSCI ESG Governance Metrics and MSCI ESG Government Ratings.

5.1   MSCI ESG Ratings

MSCI ESG Ratings aim to measure entities' management of environmental, social and governance risks and opportunities. MSCI ESG Ratings use a weighted average key issue calculation that is normalized by industry to arrive at an industry-adjusted ESG score (0-10), which is then translated to a seven-point scale from 'AAA' to 'CCC', indicating how an entity manages relevant key issues relative to industry peers.

The MSCI ESG Ratings methodology can be found at: https://www.msci.com/legal/disclosures/esg-disclosures.

5.2   MSCI ESG Controversies

MSCI ESG Controversies provide assessments of controversies concerning the potential negative environmental, social, and/or governance impact of company operations, products and services. The evaluation framework used in MSCI ESG Controversies is designed to be consistent with international norms represented by the UN Declaration of Human Rights, the ILO Declaration on Fundamental Principles and Rights at Work, and the UN Global Compact. MSCI ESG Controversies Score falls on a 0-10 scale, with "0" being the most severe controversy.

The MSCI ESG Controversies methodology can be found at: https://www.msci.com/legal/disclosures/esg-disclosures.

5.3   MSCI ESG Business Involvement Screening Research

MSCI ESG Business Involvement Screening Research (BISR) aims to enable institutional investors to manage environmental, social and governance (ESG) standards and restrictions reliably and efficiently.

The MSCI Business Involvement Screening Research methodology can be found at: https://www.msci.com/legal/disclosures/esg-disclosures.

5.4   MSCI Climate Change Metrics

MSCI Climate Change Metrics provides climate data & tools to support institutional investors seeking to integrate climate risk & opportunities into their investment strategy and processes. This includes investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, alignment with temperature pathways and factoring climate change research into their risk management processes, in particular through climate scenario analysis for both transition and physical risks.

The dataset spans across the four dimensions of a climate strategy: transition risks, green opportunities, physical risks and 1.5° alignment.

For more details on MSCI Climate Change Metrics, please refer to
https://www.msci.com/legal/disclosures/climate-disclosures.

5.5 MSCI Impact Solutions: Sustainable Impact metrics

MSCI Impact Solutions' Sustainable Impact Metrics is designed to identify companies that derive revenue from products or services with positive impact on society and the environment. The Sustainable Impact Metrics are comprised of six Environmental Impact categories and seven Social Impact categories arranged by theme.

MSCI Sustainable Impact Taxonomy

Pillar	Themes	Categories
Environmental Impact	Climate Change	1. Alternative energy 2. Energy efficiency 3. Green building
	Natural capital	4. Sustainable water 5. Pollution prevention 6. Sustainable agriculture
Social Impact	Basic needs	7. Nutrition 8. Major Disease Treatment 9. Sanitation 10. Affordable Real Estate
	Empowerment	11. SME Finance 12. Education 13. Connectivity – Digital divide

Under each of the actionable environmental and social impact themes, MSCI ESG Research has identified specific categories of products and services that it has determined companies can offer as potential solutions to environmental and social challenges.

For more details on MSCI Sustainable Impact Metrics, please refer to
https://www.msci.com/legal/disclosures/esg-disclosures.

5.6 MSCI ESG Governance Metrics

MSCI ESG Research publishes corporate governance research, scores and rankings through MSCI Governance Metrics and within the corporate governance section of MSCI ESG Ratings.

The MSCI Governance Metrics model is based on a set of governance and accounting key metrics organized into four themes: Board, Pay, Ownership and Control, and Accounting. This framework is designed to provide consistency, transparency and structural integrity. Context-sensitive scoring deductions associated with each key metric are meant to emphasize behavior over policy.

The MSCI ESG Governance Metrics methodology can be found at:
https://www.msci.com/legal/disclosures/esg-disclosures.

5.7   MSCI ESG Government Ratings

Identifies a country or region's exposure to and management of environmental, social and governance (ESG) risk factors. The ESG Government Ratings product includes: ESG Ratings & Scores for Countries, Agencies and Supranationals, and Sovereign Screening factors.

The MSCI ESG Government Ratings methodology can be found at: https://www.msci.com/legal/disclosures/esg-disclosures.

Appendix I: ESG Data Definitions

The list of ESG datapoints ("Factors") provided by MSCI ESG Research and used for the calculation of index level ESG metrics is provided in a separate spreadsheet available for download on the MSCI Index Profile Tool.

Appendix II: Changes to this Document

The following sections have been modified as of December 2023:

- Added metrics for sovereign bond indexes (sections 2.1.2, 3.2.1.2, Appendix I).

- Updated Sustainable Investment Test metric (sections 2.3, 3.2.3, Appendix I).

- Clarified the definition of Red Flag and Orange Flag ESG controversies for relevant metrics (sections 2.1.1, 2.2, 2.3, 3.2.1.1, 3.2.2 and 3.2.3).

- Added footnote on the use of Enterprise Value Including Cash (EVIC) data for the calculation of metrics (section 3.1).

The following sections have been modified as of April 2024:

- Added EU Taxonomy metrics (sections 2.3, 3.2.3, Appendix I).

- Updated calculation details for Implied Temperature Rise metric (section 3.2.3, Appendix II).

The following sections have been modified as of November 2024:

- Updated the list of mandatory and voluntary Benchmark Regulation metrics (sections 2.1.1, 2.1.3)

- Clarified calculation details for Bribery & Corruption Controversies, Decarbonization, Estimated Emissions, Female:Male Board Diversity Ratio, Overlap between the benchmark and its investable universe, and Reported Emissions (section 3.2.1.1).

- Clarified rounding for Implied Temperature Rise metric (section 3.2.3)

- Updated descriptions of MSCI ESG Research products (section 5).

- Added references to Female:Male Board Diversity Ratio, Gender Pay Gap to list of data fields in Appendix I.

The following sections have been modified as of June 2025:

- Updated section 2.1 and section 3.2.1 to reflect updates to the following mandatory Benchmark Regulation disclosures:

    o Number of convictions and amount of fines for violations of anti-corruption and anti-bribery laws

    o Weighted average percentage of benchmark constituents in the controversial weapons sector

    o Weighted average percentage of benchmark constituents in the Tobacco sector

    o GHG intensity of the benchmark

    o Exposure of the benchmark portfolio to activities included in the environmental goods and services sector, as defined in Article 2, point (5) of Regulation (EU) No 691/2011 of the European Parliament and of the Council.

- Updated section 2.1.1 and added section 2.1.4 to reflect complete list of CTB/PAB data points

- Added section 2.1.6 and updated sections 2.3 and 3.2 to describe the calculation and disclosure of additional ESG factors under the Benchmark Regulation

- Updated section 3.2.1 to clarify the calculation of the "Lack of due diligence policy (ILO)" metric.

- Updated section 3.2.4 to reflect that the coverage percentage may not be published for all ESG metrics

- Added reference to Benchmark Regulation ESG Disclosures Correction Log in section 4.2.

- Updated section 5 and removed Appendix II to simplify and reflect latest MSCI ESG Research product disclosures

- Replaced data point table in Appendix I by reference to separate spreadsheet.

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