Bloomberg MSCI US Corporate Climate Paris-Aligned ESG Select Index

This document is intended to be read in conjunction with the Bloomberg US Corporate Index and the Bloomberg MSCI Fixed Income Climate Transition and Paris-Aligned Methodology; these documents collectively constitute the index methodology for this Index.

The Bloomberg MSCI US Corporate Climate Paris-Aligned ESG Select Index is designed to meet the minimum standards of the EU Paris Aligned Benchmark (PAB) label. The index sets an initial 50% decarbonization of absolute GHG emissions and EVIC based carbon intensity relative to the Bloomberg US Corporate Index ("Parent Index"), followed by an annual 10% decarbonization trajectory of both measures. The index uses an optimization approach to achieve the decarbonisation trajectory and aims to increase the weight of issuers that meet carbon reduction targets, increase the weight of green revenue versus fossil-fuel based revenue, and increase the ESG score of the index, while minimizing turnover and active total risk. To be included, securities must be investment grade, USD-denominated, fixed-rate, corporate bonds with a minimum MSCI ESG Rating of B. The index excludes issuers with a "Red" MSCI ESG Controversy score, or that are not covered by MSCI ESG Controversy research, and negatively screens issuers that are involved in activities that are restricted per Article 12 of the Delegated Act[1]. Additionally, issuers with involvement in nuclear weapons, civilian firearms, and unconventional oil and gas are also excluded. From February 2023, the index is optimized to ensure that the minimum weight applicable to the portion of the index comprised of securities that quality as having Sustainable Exposure, is set to a minimum threshold of 20%. The index was created in March 2022, with history backfilled to August, 2019.

The features specific to this Index are set out below.

Description of Index Constituents	USD Corporate Investment Grade Bonds
Index Ticker	I36927US Index: Total Return USD Unhedged

Eligibility Requirements:

Currency	Principal and interest must be denominated in USD
Credit Rating	Investment Grade
Minimum Amount Outstanding	USD 300mn minimum par amount outstanding
Maturity	At least one year until final maturity, regardless of optionality
Minimum Liquidity Requirements	Minimum amount outstanding as specified above.
Rebalance Date	Monthly on the fifth last business day

[1] https://www.handbook.fca.org.uk/techstandards/BMR/2020/reg_del_2020_1818_oj/chapter-ii/section-3/013.html

Environmental, Social and Governance (ESG)

This section is not intended to be exhaustive and is being provided for information purposes only - detailed ESG disclosures set out in dedicated section below.

MSCI Baseline and Activity Screens	The index excludes issuers per Article 12 of the Delegated Act and as defined in the Bloomberg MSCI Fixed Income Climate Transition and Paris-Aligned Methodology – Section 3: Selection
MSCI Absolute GHG Emissions	The index excludes issuers where MSCI does not have reported or estimated Scope 1, 2 and 3 absolute GHG emissions data.
MSCI Business Involvement Screens	The index excludes issuers deriving revenue from, or being involved in, business activities related to: • Nuclear Weapons • Civilian Firearms Producers • Civilian Firearms revenue >= 5% • Unconventional Oil & Gas revenue >= 5% • Tobacco revenue >= 5% • Conventional Weapons revenue >= 5% • Weapons Systems/Components/Support Systems/Services revenue >= 10%
MSCI ESG Rating	Securities must have an MSCI ESG Rating of B or higher. Unrated Issuers are excluded.
MSCI ESG Controversies	Issuers with a "Red" MSCI ESG Controversy score (equal to zero), and issuers that are not covered by MSCI ESG Controversy research, are excluded.
MSCI Sustainable Exposure	Additionally, the index is required to ensure that a minimum of 10% of its market value weight is attributed to securities classified as having Sustainable Exposure. A description of the Sustainable Exposure methodology can be found here.
Decarbonization Trajectory Base Date	The Index Base Date is set to June 30, 2020
Annual Decarbonisation Rate	The Index is set to decarbonize at a rate of 10% per annum from the Base Date

MSCI ESG criteria relevant to the optimization:

Carbon Reduction Targets	1.2x minimum increase in weight for issuers setting carbon reduction targets relative to the Parent Index
Green Revenue	2x minimum increase in weighted average green revenue relative to the Parent Index
Green to Fossil-Fuel ratio	4x minimum green to fossil-fuel ratio relative to the Parent Index

Document Version History

Date	Update
September 2023	Publication in new format
January 2024	Update to IAF formula

Optimization Constraints and Calculations

Overview

- All qualifying securities are selected from the Bloomberg US Corporate Index ("Parent Index") and are grouped by Ticker
- The Bloomberg PORT Optimizer is used to select and weight each Ticker in the Index
  - The optimizer runs once per month to calculate notional positions of each Ticker
  - This process will not impact bond prices and other security-level analytics
- The optimizer has two main objectives:
  - Minimize Active Total Risk versus the Parent Index (trade-off = 0.1); and
  - Minimize Turnover (trade-off = 1)

Optimization Constraints

Each of these constraints are hard constraints, meaning that the optimizer will only consider solutions within these bounds.

Climate Constraints	
Reduction in weighted average absolute GHG emissions relative to the Parent Index[1]	-50%
Minimum annual reduction in weighted average absolute GHG emissions relative to the absolute GHG emissions at Base Date[2]	-10%
Reduction in weighted average carbon intensity relative to the Parent Index[1,3,7]	-50%
Minimum annual reduction in weighted average carbon intensity relative to the carbon intensity at Base Date[2,3]	-10%
Minimum increase in weighted average green revenue relative to the Parent Index	2.0001x
Minimum green to fossil-fuel based ratio relative to the Parent Index	4.0001x
Minimum increase in weight for issuers setting carbon reduction targets relative to the Parent Index[4]	1.20x

ESG Constraint	
Minimum increase in the weighted average ESG score relative to the Parent Index	1.1001x

Sustainable Exposure Constraint	
Minimum weight applicable to the portion of the index comprised of securities that qualify as having Sustainable Exposure	20%

Investability Constraints	
Ticker cap	4.5%
Ticker weight relative to the Screened Parent Index	+/- 1%
Ticker weight relative to the Screened Parent Index (min/max):	0.1x / 5.0x
DTS (duration times spread) relative to the Parent Index	+/- 5%
YTW (yield to worst) relative to the Parent Index	>=
OAD (option-adjusted duration) relative to the Parent Index	+/- 0.25
Bloomberg Class 3 sector weight relative to the Parent Index[6]	+/- 5%
Country of risk weight relative to the Parent Index	+/- 5%
Turnover relative to the initial portfolio	Parent Index +4%

Notes:

1. At index inception ("Base Date"), the weighted average absolute GHG emissions (Scopes 1, 2 and 3), and carbon intensity (Scopes 1, 2 and 3), in the Bloomberg MSCI US Corporate Climate Paris-Aligned ESG Select Index, must be reduced by 50% relative to the weighted average absolute GHG emissions, and carbon intensity, of the Parent Index.

$$\sum(Ticker\ weight\ in\ index) * Ticker\ level\ GHG\ emission)$$

$$\sum(Ticker\ weight\ in\ index * Ticker\ level\ carbon\ intensity)$$

Note: issuers with no reported/estimated emissions or intensity are excluded from the weighted average calculations.

2. At each monthly rebalance, the weighted average absolute GHG emissions, and carbon intensity, in the Bloomberg MSCI US Corporate Climate Paris-Aligned ESG Select Index, must be reduced by the lower of:

    a. minimum reduction of 50% relative to the Parent Index (refer to formula in note 1); or

    b. minimum decarbonisation trajectory of 10% relative to Base Date

    $$W_t = W_1 \times 0.90^{\frac{(t-1)}{12}}$$

    t = number of monthly index rebalances
    W_1 = weighted average absolute GHG emission, or carbon intensity, of the PAB index at Base Date

3. At each monthly rebalance an inflation adjustment factor ("IAF") is applied to the issuers carbon intensity for the purpose of accounting for changes in issuers EVIC.

    IAF_d is calculated by dividing the average EVIC across all benchmark constituents as of the rebalance date, by the average EVIC of the index constituents of the benchmark as of the Index Base Date:

    If the Inflation Value is specified:

    $$IAF_d = \frac{\sum_{i=1}^{n_d} iv_d^i \times nonZero(iv_d^i)}{\sum_{i=1}^{n_d} nonZero(iv_d^i)} \Bigg/ \frac{\sum_{i=1}^{n_{d_0}} iv_{d_0}^i \times nonZero(iv_{d_0}^i)}{\sum_{i=1}^{n_{d_0}} nonZero(iv_{d_0}^i)}$$

    Else:

    $$IAF_d = 1$$

    Where:
    iv_d^i and $iv_{d_0}^i$ mean the Inflation Values (EVIC) for Constituent i on Determination Dates d and Index Base Date d_0 respectively; and
    n_{d_0} means the number of Constituents on Determination Date d_o.
    If there is no reported Inflation Value for Constituent i on Determination Date d, then the value is 0 (zero); and $nonZero(iv_d^j)$ means the value 1 (one) if there is an Inflation Value iv_d^j reported and different from zero for Constituent j on Determination Date d, else the value 0 (zero).

4. At each monthly rebalance, Tickers that meet carbon reduction targets receive a minimum 20% increase in weight relative to the Tickers' weight in the Parent Index. To achieve the weight increase, Tickers must meet the following requirements:

    a. Must have reported absolute GHG emissions; and

    b. Must have explicitly set carbon reduction targets; and

    c. Must have achieved a minimum 7% year-on-year absolute GHG emissions reduction over the previous 3 years

5. The Screened Parent index is the PAB index after the business involvement and ESG exclusions have been applied, but prior to optimization.

6. BCLASS 3 Energy sector is excluded from the sector constraint.

7. Carbon intensity constraint is applied only to issuers where MSCI has provided reported or estimated Scope 1, 2 and 3 carbon intensity data.

Constraint Relaxation Process

If no solution is found for the Optimization Problem, an iterative approach is followed according to the below steps:

1. ESG Score constraint is reduced by 2.5%
2. Turnover constraint removed to achieve a result

Note: each relaxation step described above remains in place for all subsequent steps.

Environmental, Social and Governance (ESG) Disclosures

Where an index applies MSCI screens and a security/issuer is not included in the MSCI research coverage for that screen, unless otherwise noted, this index will exclude such security/issuer. This applies to MSCI Standard Climate Change Metrics and MSCI Standard Business Involvement Screening Research.

<table>
<tr><th colspan="4">EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY</th></tr>
<tr><td colspan="2">1. Name of the benchmark administrator.</td><td colspan="2">Bloomberg Index Services Limited (“BISL”)</td></tr>
<tr><td colspan="2">2. Type of benchmark</td><td colspan="2">Fixed Income</td></tr>
<tr><td colspan="2">3. Name of the benchmark or family benchmarks.</td><td colspan="2">Bloomberg MSCI US Corporate Climate Paris-Aligned ESG Select Index</td></tr>
<tr><td colspan="2">4. Does the benchmark methodology for the benchmark or family of benchmarks take into account ESG factors?</td><td colspan="2">Yes</td></tr>
<tr><td colspan="4">5. Where the response to Item 4 is positive, please list below, for each family of benchmarks, those ESG factors that are taken into account in the benchmark methodology, taking into account the ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816.
Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets.
The ESG factors shall be disclosed at an aggregated weighted average value at the level of the family of benchmarks.</td></tr>
<tr><td>a) List of Combined factors considered:</td><td>ESG Controversy Score</td><td>Exclusion</td><td>The index excludes researched constituents based on the controversy score associated with the issuer. Any issuer with a “Red” MSCI ESG Controversies Score (equal to zero), or issuers not covered by MSCI ESG Controversies research, are excluded from the Index.

MSCI ESG Controversies identifies company involvement in major ESG controversies and adherence to international norms and principles such as UNGC and ILO Core Conventions.

The methodology measures companies' public profiles based on actual or alleged involvement in adverse impact activities across the 3 ESG pillars. Each controversy is assigned a flag depending on severity, direct vs indirect involvement of the company and whether it's ongoing, partially or fully concluded. The overall company controversy score and corresponding flag is determined by the most severe ESG controversy case:
• A Red Flag indicates an ongoing Very Severe ESG controversy implicating a company directly through its actions, products, or operations.
• An Orange Flag indicates a Severe ongoing controversy with the company’s direct involvement, or a Very Severe controversy that is either partially resolved or indirectly attributed to companies’ actions, products, or operations.
• Yellow indicates noteworthy ESG controversies.
• Green indicates either less significant ESG controversies or none at all.

Please refer to the ESG Controversies and Global Norms Methodology that can be accessed here.</td></tr>
</table>

	MSCI ESG Rating	Exclusion	MSCI ESG Ratings provide research, data, analysis and ratings of how well companies manage environmental, social and governance risks and opportunities. MSCI ESG Ratings provides an overall company ESG rating – a seven-point scale from ´AAA´ to ´CCC´. In addition, the product provides scores and percentiles indicating how well a company manages each key issue relative to industry peers, as well as underlying data and metrics used to compile the scores and ratings. The Index excludes issuers with ESG ratings of CCC using the MSCI ESG Corporate Rating model. Issuers not covered by MSCI ESG research are also excluded. Please refer to the MSCI ESG Ratings Methodology that can be accessed here and summary of what an MSCI ESG rating is can be found here.
b) List of environmental factors considered:	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 of the European Parliament and of the Council.	N/A	The Index does not apply this factor in pursuit of its ESG objectives.
	Greenhouse gas (GHG) emissions of the benchmark.	Weighting	BISL uses an optimization process to reweight securities such that the indices achieve at least a 50% absolute GHG emissions and EVIC based carbon intensity reduction relative to the Parent Index, followed by a 10% annual decarbonization of both measures from the Base Date. • Absolute GHG emissions: represents the company's most recently reported or estimated Scope 1 + Scope 2 + Scope 3 greenhouse gas emissions (if available). Scope 1 emissions are those from sources owned or controlled by the company, typically direct combustion of fuel as in a furnace or vehicle. Scope 2 emissions are those caused by the generation of electricity purchased by the company. Estimated scope 3 emissions (total) as defined by the Greenhouse Gas Protocol [tCO2e/yr]. • EVIC based carbon intensity: represents the company's most recently reported or estimated Scope 1 + Scope 2 + Scope 3 emissions normalized by the most recently available enterprise value including cash (EVIC) in million USD. This ratio facilitates portfolio analysis by allocating emissions across equity and debt. For further information on this factor, please refer to the Optimization Constraints section of this document.
	Percentage of GHG emissions reported versus estimated.	N/A	The Index does not apply this factor in pursuit of its ESG objectives.
	Exposure of the benchmark portfolio to companies the activities of which fall under Divisions 05 to 09, 19 and 20 of Annex I to Regulation (EC) No 1893/2006.	N/A	The Index does not apply this factor in pursuit of its ESG objectives.

	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	N/A	The Index does not apply this factor in pursuit of its ESG objectives.
	Green Revenue	Weighting	The index seeks to ensure that the weighted Green Revenue of the index is always 2x greater than the weighted Green Revenue of the Parent Index. See Optimization Constraints section of this document. Green Revenue 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.
	Green to Fossil Fuel Ratio	Weighting	The index seeks to ensure that the ratio of Green Revenue versus Fossil-Fuel Revenue of the index is always 4x greater than the ratio of Green Revenue versus Fossil-Fuel Revenue of the Parent Index. See Optimization Constraints section of this document. A description of Green Revenue is described directly above. Fossil-Fuel revenue is represented by the following factors: • Thermal coal mining (including lignite, bituminous, anthracite, steam coal) and its sale to external parties • Unconventional oil and gas (including oil sands, oil shale, shale gas, shale oil, coal seam gas, coal bed methane) • Conventional oil and gas (including Arctic onshore/offshore, deepwater, shallow water and other onshore/offshore) • Liquid fuel based power generation • Natural gas based power generation • Thermal coal based power generation • Oil and gas refining
	Companies setting and meeting carbon reduction targets.	Weighting	Companies that set and publish absolute GHG emissions reductions targets, meet, or exceed those targets, and report their Scope 1 and 2 absolute emissions levels, will have their weight in the optimized indices increased by a minimum of 20% relative to their weight in the Parent Indices. For further information on this factor, please refer to the Bloomberg MSCI Climate Transition and Paris-Aligned Benchmark Methodology – Section 5: Construction – Optimized Methodology
	Companies that are found to significantly harm one or more environmental objectives.	Exclusion	Researched companies having faced very severe and severe controversies pertaining to environment issues: • Land Use and biodiversity • Toxic spills and releases • Energy and climate change • Operational non-hazardous waste management • Supply chain environmental impact • Water management For further information on this factor, please refer to Bloomberg MSCI Climate Transition and Paris-Aligned Benchmark Methodology Section 3: Selection.

	Companies with coal-related activities	Exclusion	Researched companies that derive 1% or more of their revenues from exploration, mining, extraction, distribution or refining of hard coal and lignite. For further information on this factor, please refer to Bloomberg MSCI Climate Transition and Paris-Aligned Benchmark Methodology Section 3: Selection.
	Companies with oil- and gas-related activities	Exclusion	Researched companies that derive 10% or more of their revenues from the exploration, extraction, distribution or refining of oil fuels Researched companies that derive 10% or more of their revenues from the exploration, extractions, manufacturing or distribution of gaseous fuels. For further information on this factor, please refer to Bloomberg MSCI Climate Transition and Paris-Aligned Benchmark Methodology Section 3: Selection Additionally, researched companies that derive revenue greater than or equal to 5% from unconventional oil and gas as per the definition of Febelfin are also excluded. Included is revenue from oil sands, oil shale, shale gas, shale oil, coal seam gas, coal bed methane as well as Artic onshore/offshore. It excludes conventional oil and gas production, deepwater, shallow water and other onshore/offshore. This factor returns figures for all companies with relevant revenue regardless of the amount; the threshold recommended by Febelfin is 10% (as of 2019).
	Companies with electricity-generating activities	Exclusion	Researched companies that derive 50% or more of their revenues from electricity generation are excluded from the Indices. For further information on this factor, please refer to Bloomberg MSCI Climate Transition and Paris-Aligned Benchmark Methodology Section 3: Selection.
	MSCI Sustainable Investment Exposure	Weighting	The index is optimized to ensure that the minimum weight applicable to the portion of the index comprised of securities that quality as having Sustainable Exposure, is set to a minimum threshold of 20%. For further information refer to the ESG Factors pertaining to the MSCI Sustainable Investment Exposure Methodology section, found later in this document.
c) List of social factors considered:	International treaties and conventions, United Nations principles or, where applicable, national law used in order to determine what constitutes a 'controversial weapon'.	Exclusion	Researched companies with any kind of involvement in the following weapons categories: • Landmines • Biological and Chemical • Cluster Munitions • Depleted Uranium • Blinding Lasers • Incendiary • Non-detectable fragments For further information on this factor, please refer to Bloomberg MSCI Climate Transition and Paris-Aligned Benchmark Methodology Section 3: Selection.
	Nuclear Weapons	Exclusion	Research companies with involvement in the following categories: • Manufacture (including assembly and integration) of nuclear warheads and/or whole nuclear missiles (includes companies with contracts to operate/manage government-owned facilities) • Manufacture or assemble delivery platforms for the exclusive delivery of nuclear weapons • Manufacture or assemble delivery platforms capable of delivery of nuclear weapons and conventional weapons • Manufacture components for exclusive use in nuclear weapons

			• Manufacture components that can be used in both nuclear and conventional weapons • Manufacture components for nuclear-exclusive delivery platforms Companies that provide auxiliary services to nuclear weapons such as repairing and maintaining, providing overhaul and upgrade services, stockpiling and stewardship, R&D work, testing and simulations, etc.
	Civilian Firearms	Exclusion	Researched companies that manufacture firearms and small ammunitions for civilian markets, or companies that derive revenue greater than or equal to 5% from the manufacture and retail of civilian firearms, are excluded.
	Conventional Weapons	Exclusion	Researched companies that derive revenue greater than or equal to 5% from the production of conventional weapons are excluded.
	Weapons Systems	Exclusion	Researched companies that derive revenue greater than or equal to 10% from weapons systems/components, and support systems and services, are excluded.
	Weighted average percentage of benchmark constituents in the tobacco sector.	Exclusion	Researched companies involved in the cultivation and production of tobacco, or that derive greater than or equal to 5% of revenue from tobacco-related business activities, are excluded.
	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.	Exclusion	Researched companies that violate UNGC compliance and have been identified as violating: • Human Rights • Environment • Labor Rights (Core) • Bribery and Corruption Companies that are not researched by MSCI for this factor are excluded. For further information on this factor, please refer to Bloomberg MSCI Climate Transition and Paris-Aligned Benchmark Methodology Section 3: Selection
	Exposure of the benchmark portfolio to companies without due diligence policies on issues addressed by the fundamental International Labor Organisation Conventions 1 to 8.	N/A	The index does not apply this factor in the pursuit of its ESG objectives.
	Weighted average gender pay gap.	N/A	The index does not apply this factor in the pursuit of its ESG objectives.
	Weighted average ratio of female to male board members.	N/A	The index does not apply this factor in the pursuit of its ESG objectives.
	Weighted average ratio of accidents, injuries, fatalities.	N/A	The index does not apply this factor in the pursuit of its ESG objectives.
	Numbers of convictions and amount of fines for violations of anti-corruption and anti-bribery laws.	N/A	The index does not apply this factor in the pursuit of its ESG objectives.
d) List of governance factors considered:	Weighted Average Governance Rating of the Benchmark	N/A	The Indices do not take this ESG factor into account in the methodology.

6. Where the response to Item 4 is positive, please list below, for each benchmark, those ESG factors that are taken into account in the benchmark methodology, taking into account the ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816, depending on the relevant underlying asset concerned. Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets. The ESG factors shall not be disclosed for each constituent of the benchmark but shall be disclosed at an aggregated weighted average value of the benchmark. Alternatively, all of this information may be provided in the form of a hyperlink to a website of the benchmark administrator included in this explanation. The information on the website shall be easily available and accessible. Benchmark administrators shall ensure that information published on their website remains available for five years	
a) List of environmental factors considered:	Please see above.
b) List of social factors considered:	Please see above.
c) List of governance factors considered:	Please see above.
7. Data and standards used.	
a) Data input. *(i) Describe whether the data are reported, modelled or, sourced internally or externally.* *(ii) Where the data are reported, modelled or sourced externally, please name the third party data provider.*	All ESG data for the benchmarks is sourced externally from: MSCI Research esgclientservice@msci.com https://www.msci.com/research-and-insights MSCI ESG Research relies on a proprietary methodology informed by a range of data sources. • Reported data ○ Corporate documents: annual reports, proxy filings, environmental and social reports, securities filings, websites and Carbon Disclosure Project responses. Externally sourced data ○ Government data: central bank data, U.S. Toxic Release Inventory, Comprehensive Environmental Response and Liability Information System (CERCLIS), RCRA Hazardous Waste Data Management System, etc. We continue to assess the value of other, similar information sources, particularly for European companies. ○ Popular, trade, and academic journals: accessed through websites, subscriptions and searches of online databases. ○ News media: major news publications globally, including local-language sources across a range of markets. ○ Relevant organizations and professionals: reports from and interviews with trade groups, industry experts and nongovernmental organizations familiar with the companies´ operations and any related controversies • Modelled data ○ For climate-related metrics, when data is not disclosed by companies, MSCI ESG Research uses a proprietary GHG emission estimation model. ○ When companies do not report exact revenue figures for a covered business activity, MSCI ESG Research provides an estimate of the extent of companies' involvement in the subject activity. For top level scores (ESG Ratings, Environmental, Social and Governance pillars), MSCI ESG Research estimates macro-level risk exposure for companies´ based on the type and location of operations, distribution of products. Data sources used in the exposure calculations include, but not limited to: • Comprehensive Environmental Data Archive (CEDA) • US Department of Energy; International Council on Clean Transportation • Lamont-Doherty Earth Observatory, Columbia University • Organization of Economic Co-Operation and Development (OECD) • Canadian Industrial Water Survey • Hoekstra, A.Y. and Mekonnen, M.M. (2011) • Ecorisk

	• World Development Indicators (WDI) • Annual Change of Forest Resources _ Food and Agriculture Organization (FAO) • World Wildlife Fund (WWF) • US EPA´s Toxics Release Inventory (TRI) • Risk-Screening Environmental Indicators (RSEI) • US Bureau of Labor Statistics (BLS) • International Labour Organization (ILO) • US Occupational Health & Safety Administration (OSHA) • UK Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) • International Chemical Secretariat (ChemSec) Substitute It Now (SIN) List • International Monetary Fund (IMF) • World Health Organization (WHO) • UN Principles for Responsible Investments (UN PRI) • World Resource Institute (WRI) • Consultative Group to Assist the Poor (CGAP) • US Census Bureau Current Population Survey Supplement • World Bank Governance Indicators (WGI) • Transparency International (TI) • World Bank (WB) • SNL Financial • Thomson Financial Refer to the MSCI ESG & Climate Methodologies page for further details on the data sources for the relevant ESG factors.
b) Verification of data and guaranteeing the quality of those data. *Describe how data are verified and how the quality of those data is ensured.*	**MSCI ESG Score** The ESG Ratings process includes multiple steps to review the quality of the analysis and consistent application of the methodology. The following quality assurance and oversight processes are observed: • Quality review process: Data quality checks are conducted on all companies prior to the publication of their ESG Rating. • Analytical review: All ESG Ratings are subject to review by an analyst and a reviewer. In cases where the analyst review results in a proposal for a change to an ESG Rating, and for defined other circumstances, the Rating is subject to a review by a second senior analyst. • Ratings Methodology Committee: This committee addresses the following specific cases, as well as other escalations related to methodology application: - Proposal to add a company-specific Key Issue in a company's assessment. - Ratings change of two letters or more. - New AAA- or CCC-rated company. - Requests for deviations from the weights for industry Key Issues due to significant differences in business model from the industry peer set. - Requests to deviate from standard methodology for including or excluding controversies cases in a company's ratings analysis.

	• ESG Methodology Committee: This committee addresses escalations from the Ratings Methodology Committee and reviews changes to the ESG Ratings methodology, including: - Updates to the ESG Industry Materiality Map, which determines the relevance of ESG Key Issues to sub-industries. - Changes to data sources or calculations used in ESG Ratings. - Methodology proposals for consultation. Please see the MSCI ESG Ratings Methodology and Process via the MSCI ESG Methodologies website for further detail. **MSCI ESG Controversies and Global Norms** The consistency of ESG controversies assessments and scoring based on MSCI ESG Controversies and Global Norms Methodology is ensured through ongoing peer review and MSCI ESG Controversies Methodology Committee (CMC) reviews. The CMC has direct oversight of the content of the company ESG Controversies reports and of the consistent application of the methodology. The following situations require CMC review and approval: • Proposed downgrades of controversy cases to Red Flag status must first be approved by the CMC before being escalated to the MSCI ESG Methodology Committee (EMC). • Proposed upgrades of controversy cases from Red Flag status. • Proposed significant score changes to existing controversy cases. • Proposed designation of a case as of Historical Concern (whereby the case no longer has a score or a corresponding flag, but is retained in the company's ESG Controversies report for context and reference). In addition to ESG controversy case reviews and approvals, the CMC reviews and approves clarifications and updates to the MSCI ESG Controversies and Global Norms methodology. The CMC escalates selected individual ESG controversy cases, including upgrades from and downgrades to Red Flag status, to the EMC, which governs all MSCI ESG solutions and presides over the development, review and interpretation of all ESG Research methodologies, including the MSCI ESG Controversies and Global Norms methodology. The EMC is also responsible for the review and approval of revisions to the MSCI ESG Controversies and Global Norms methodology Please see the MSCI ESG Controversies and Global Norms Process via their ESG Methodologies website for further detail. **MSCI Business Involvement Screens** Initial company research and analysis is followed by a rigorous quality review process. Data accuracy and company profiles are peer-reviewed, then sent to content leads for final approval. In specific cases in which a company's business activity is not clearly defined by MSCI ESG Research's methodology and there is no precedent, the case is escalated to the Head of Screening Research. Cases that require further interpretation or an update to the methodology are brought to the MSCI ESG Impact and Screening Methodology Committee for resolution. Please see the MSCI Business Involvement Methodology Overview for further detail.
c) Reference standards *Describe the international standards used in the benchmark methodology.*	**MSCI ESG Score** MSCI ESG Research relies on a proprietary methodology informed by a range of data sources. MSCI ESG Research does not explicitly mandate reporting along specific disclosure standards. Commonly utilized disclosure frameworks for data collected and used by MSCI ESG Research include GRI, SASB, UN Global Compact; and, for specific performance indicators, GHG Protocol, and applicable ISO standards. **MSCI ESG Controversies and Global Norms** 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 principles.

	MSCI Business Involvement Screens The MSCI ESG Research team utilised a combination of industry classifications, business descriptions and keyword searches in company filings to identify potential involvement in each of the screening topics. **MSCI Green Revenue** "Green" categories are currently based on MSCI ESG Research definitions. EU Taxonomy will be used once finalized and formalized.
Date on which information has been last updated and reason for the update:	September 2023 (first publication)

ESG Factors pertaining to the MSCI Sustainable Investment Exposure Methodology

Note: the application of the below methodology is used to weight the portion of the index that is classified as having Sustainable Investment Exposure ("SI%"). The index is designed to ensure that the SI% remains greater than or equal to a market weight of 20%.

An issuer qualifies as having sustainable exposure if it meets all of the following conditions:	
ESG Company Ratings	A company's final ESG Rating. To arrive at a final letter rating, the weighted average of the key issue scores are aggregated and companies are ranked from best (AAA) to worst (CCC). Issuer must have a rating of BB or higher. The condition is not met if the issuer is not covered by MSCI ESG Ratings.
ESG Controversies	The overall company assessment signals whether a company has a notable controversy related to a company's operations and/or products, and the severity of the social or environmental impact of the controversy. Issuer must have controversies score of 2 or higher. The condition is not met if the issuer is not covered by MSCI ESG Controversy research.
At least one of the following conditions must met:	
Sustainable Impact Revenue	This field represents the total of all revenues derived from any of the thirteen social and environmental impact themes including nutrition, sanitation, major diseases treatment, SME finance, education or affordable real estate, alternative energy, energy efficiency, green building, pollution prevention and sustainable water. Overlapping scores may occur in certain themes. Issuer must derive revenue greater than or equal to 20%.
Science Based Targets (SBTi)	Flagged as "T" if the company has one or more active carbon emissions reduction target/s approved by the Science Based Targets initiative (SBTi).
The issuer is not flagged by the following business involvement criteria:	
Controversial Weapons	Companies that have any ties to cluster munitions, landmines, biological / chemical weapons, depleted uranium weapons, blinding laser weapons, incendiary weapons, and/or non-detectable fragments.
Thermal Coal Revenue	This factor identifies the maximum percentage of revenue (either reported or estimated) greater than 0% that a company derives from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties. It excludes: revenue from metallurgical coal; coal mined for internal power generation (e.g. in the case of vertically integrated power producers); intra-company sales of mined thermal coal; and revenue from coal trading. Issuer must not derive revenue greater than or equal to 1%.
Tobacco Production	Companies that manufacture tobacco products, such as cigars, blunts, cigarettes, e-cigarettes, inhalers, beedis, kreteks, smokeless tobacco, snuff, snus, dissolvable and chewing tobacco. This also includes companies that grow or process raw tobacco leaves.
Tobacco Revenue	The recent-year percent of revenue, or maximum estimated percent, a company has derived from tobacco-related business activities. Issuer must not derive revenue greater than or equal to 5%.
If an issuer does not meet the above conditions, but has on issue a Green Bond, the Green Bond qualifies as having Sustainable Exposure only if it meets all of the following condition:	
Bond is assessed as a Green Bond per the MSCI ESG Research's Green Bond assessment framework	Refer to the Bloomberg MSCI Green Bond Methodology Appendix 1 ESG Disclosures
ESG Controversies	The overall company assessment signals whether a company has a notable controversy related to a company's operations and/or products, and the severity of the social or environmental impact of the controversy. Issuers classified as corporate by the Bloomberg Fixed Income Classification System (BCLASS 1) must have controversies score of 1 or higher. This condition does not apply to non-corporate issuers of Green Bonds.

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