July 2025

MSCI ESG Climate Paris Aligned Corporate Bond Custom Indexes Methodology

Contents

1 Introduction

The MSCI USD IG ESG Climate Paris Aligned Corporate Bond Custom Index and MSCI EUR IG ESG Climate Paris Aligned Corporate Bond Custom Index[1] (herein, the "Indexes") are designed to support investors seeking to reduce their exposure to transition and physical climate risks and who wish to pursue opportunities arising from the transition to a lower-carbon economy while aligning with the Paris Agreement requirements. The Indexes are designed to exceed the minimum standards of the EU Paris-Aligned Benchmark under the EU Benchmark Regulation (EU delegated acts)[2]. The Indexes also incorporate business exclusion screens[3] based on Controversial Weapons, ESG Controversies, Tobacco, Environmental Harm, Thermal Coal Mining, Oil & Gas, Power Generation, Civilian Firearms, Nuclear Weapons, Adult Entertainment, Alcohol, Conventional Weapons, Gambling, Genetically Modified Organisms, Nuclear Power, Nuclear Utilities , Fossil Fuel Reserves Ownership, Fossil Fuel Extraction, Thermal Coal Mining, Unconventional Oil & Gas Extraction, Thermal Coal Power and ESG Rating.

The Indexes are constructed from MSCI USD IG Corporate Bond Custom Index and MSCI EUR IG Corporate Bond Index respectively (herein, the "Parent Indexes") following an optimization-based approach and aim to:

- Reweight or exclude securities to exceed the minimum requirements of the EU Paris-Aligned Benchmark designation
- Align with a 1.5°C climate scenario using the MSCI Climate Value-at-Risk and a "self-decarbonization" rate of 10% year on year
- Reduce the Index's exposure to physical risk arising from extreme weather events by at least 50% relative to the Parent Index.
- Shift index weight from "fossil fuel-based" to "green"[4] using the MSCI Low Carbon transition score and by excluding categories of fossil-fuel-linked companies
- Increase the weight of companies which are exposed to climate transition opportunities and reduce the weight of companies which are exposed to climate transition risks
- Reduce the weight of companies assessed as high carbon emitters using scope 1, 2 and 3 emissions
- Increase the weight of companies with credible carbon reduction targets through the weighting scheme

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[1] The Indexes are governed by a set of methodology and policy documents ("Methodology Set"), including the present Index methodology document. Please refer to Appendix VII for more details.
[2] Regulation (EU) 2016/1011 as amended by Regulation (EU) 2019/2089. In case there are changes in the EU delegated acts and an update to the Index methodology is required, MSCI will issue an announcement prior to implementing the changes in the methodology. MSCI will not conduct a formal consultation for such an update.
[3] Defined in detail in Appendix VI.
[4] Green revenue and Fossil fuel-based Revenue are defined in Appendix III.

- Achieve an effective duration and credit rating similar to the Parent Index
- Minimize active share[5] compared to the Parent Index and achieve low turnover

The Parent Index of the MSCI USD IG ESG Climate Paris Aligned Corporate Bond Custom Index, i.e. the MSCI USD IG Corporate Bond Custom Index, is constructed from a global credit universe of bonds denominated in USD by applying various selection criteria defined in Section 2.1. The Parent Index of the MSCI EUR IG ESG Climate Paris Aligned Corporate Bond Custom Index, i.e. the MSCI EUR IG Corporate Bond Index, is constructed from a global credit universe of bonds denominated in EUR by applying various selection criteria defined in MSCI Corporate Bond Indexes Methodology[6].

[5] Active Share is a measure of the turnover that will be incurred in shifting from the Parent Index to the derived Index. Active Share minimization is achieved by minimizing the sum of squared active weights.
[6] Refer to MSCI Corporate Bond Indexes Methodology available at: https://www.msci.com/index-methodology

2 Index Construction Methodology

The Indexes use company rating and research provided by MSCI ESG Research[7] for the index construction.

Constructing the Indexes involves the following steps:

- Defining the Parent Indexes
- Defining the Eligible Universe
- Defining the Optimization Constraints
- Determining the Optimized Indexes

2.1 Defining The Parent Indexes

The MSCI USD IG Corporate Bond Custom Index is constructed using the methodology defined for MSCI USD IG Corporate Bond Index in the MSCI Corporate Bond Indexes Methodology[8] except for the below change:

- At rebalancing, each security included in the Starting Index will have a notional amount outstanding greater than or equal to USD 500 million.

The methodology of MSCI EUR IG Corporate Bond Index is defined in the MSCI Corporate Bond Indexes Methodology[9].

The maintenance of the MSCI USD IG Corporate Bond Custom Index and MSCI EUR IG Corporate Bond Index is defined in the MSCI Corporate Bond Indexes Methodology[10].

2.2 Defining the Eligible Universe

The Eligible Universe is constructed from the Parent Indexes by excluding securities of issuers based on the exclusion criteria defined in Appendix VI.

[7] See section 4 for further information regarding ESG and climate data used in the Indexes that MSCI Limited and MSCI Deutschland GmbH source 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 as a provider to MSCI Limited and MSCI Deutschland GmbH. MSCI Limited and MSCI Deutschland GmbH are the benchmark administrators for the MSCI Indexes.
[8] Refer to MSCI Corporate Bond Indexes Methodology available at: https://www.msci.com/index-methodology
[9] Refer to MSCI Corporate Bond Indexes Methodology available at: https://www.msci.com/index-methodology
[10] Refer to MSCI Corporate Bond Indexes Methodology available at: https://www.msci.com/index-methodology

2.3 Optimization Constraints

At each Monthly Index Review, the Index is constructed using an optimization process that aims to achieve replicability and investability as well as minimize active share relative to the Parent Index subject to the following constraints:

1. Transition and physical risk objectives – constraints detailed in Table 1
2. Transition opportunities objectives – constraints detailed in Table 2
3. Diversification objectives – constraints detailed in Table 3

The definitions of the target metrics for the optimization are detailed in Appendix III.

Table 1: Constraints imposed to meet transition and physical risk objectives

No.	Transition and Physical Risk Objective	MSCI ESG Climate Paris Aligned Corporate Bond Custom Indexes
1.	Minimum reduction in absolute Greenhouse Gas (GHG) Emission[11] (Scope 1+2+3[12]) relative to Parent Index	50%
2.	Minimum average reduction (per annum) in absolute GHG Emission relative to absolute GHG Emission at the Base Date[13]	10%
3.	Minimum Increase in aggregate weight in companies setting targets relative to the aggregate weight of such companies in the Parent Index. Companies Setting Targets are defined in Appendix III.	20%
4.	Minimum reduction in Weighted Average Potential Emissions relative to Parent Index.	50%
5.	Minimum increase in weighted average Low Carbon Transition (LCT) Score relative to Parent Index. Please see more details on LCT Score in Appendix I.	5%

[11] Based on EU delegated acts, absolute GHG Emissions may be used as a measure of carbon exposure for fixed income indexes.
[12] Prior to the May 2020 Monthly Index Review of the Indexes, the absolute Weighted Average Carbon Emissions has been calculated based on Scope 1+2 Emissions.
[13] Prior to the May 2020 Monthly Index Review of the Indexes, the reduction in absolute Weighted Average Carbon Emission has been calculated using Scope 1+2 Emissions since Inception

No.	Transition and Physical Risk Objective	MSCI ESG Climate Paris Aligned Corporate Bond Custom Indexes
6.	Aggregate Climate Value-At-Risk under 1.5-degree scenario[14]. Please see more details on Aggregate Climate Value-At-Risk in Appendix II and Appendix III.	>= Max (0, Aggregate Climate VaR of Parent Index)
7.	Minimum reduction in Weighted Average Extreme Weather Climate Value-At-Risk (Aggressive Scenario) relative to Parent Index	50%[15]

Table 2: Constraints imposed in order to meet transition opportunity objectives

No.	Transition Opportunity Objective	MSCI ESG Climate Paris Aligned Corporate Bond Custom Indexes
8.	Minimum increase in weighted average LCT Score relative to Parent Index[16]	5%
9.	Minimum ratio of Weighted Average Green Revenue/ Weighted Average Fossil fuel-based Revenue relative to Parent Index	4 times
10.	Minimum increase in Weighted Average Green Revenue relative to the Parent Index[17]	200%

[14] For more details on Climate value-At-Risk, please refer to Appendix II. Prior to the May 2020 Monthly Index Review of the Indexes, the Policy Risk Climate VaR used Scope 1 Emissions since Inception

[15] In case the Parent Index has a positive Weighted Average Extreme Weather Climate VaR, the floor will be applied at the level of the Weighted Average Extreme Weather Climate VaR of the Parent Index.

[16] The constraint on increase in LCT Score is designed to underweight companies with a low LCT Score (assessed as companies facing risks from a low carbon transition) and overweight companies with a high LCT Score (assessed as companies which may have opportunities from a low carbon transition). Thus, the constraint has been repeated in Table 2 to illustrate how the constraint meets both the objectives.

[17] This is implemented as a soft constraint. Soft constraints are useful for reducing the possibility of Barra Optimizer not finding a feasible solution. For well-behaved convex problems, Barra Optimizer will return an optimal portfolio satisfying the bounds if such a portfolio exists. Otherwise, it will try to find a portfolio with minimal violation of the constraint.

Table 3: Constraints imposed to meet diversification objectives

No.	Diversification Objective	MSCI ESG Climate Paris Aligned Corporate Bond Custom Indexes
11.	Constituent Active Weight	+/- 2%
12.	Issuer capping	3%
13.	Security Weight as a multiple of its weight in the Parent Index	10x
14.	Active Sector Weights (the Energy GICS Sector is not constrained)	+/-5%
15.	Active Country Weights[18]	+/-5%
16.	One Way Turnover	4%
17.	Active Effective Duration of Index[19]	+/-0.25
18.	Active Credit Rating of Index[20]	+/-0.25

During the Monthly Index Review, in the event that there is no optimal solution that satisfies all the optimization constraints, the following constraints will be relaxed, until an optimal solution is found:

- Relax the one-way index turnover constraint in steps of 1% up to 10%
- Relax the maximum security weight multiple constraint in steps of 2 up to 20
- The one-way index turnover constraint and the maximum security weight multiple constraint are alternately relaxed until a feasible solution is achieved

In the event that no optimal solution is found after the above constraint relaxations are exhausted, MSCI can further relax the other optimization constraints to successfully rebalance the Index. In case no optimal solution is found after all the above relaxations the relevant Index will not be rebalanced for that Monthly Index Review.

[18] Based on country of domicile. In case there are countries in the parent index which weigh less than 2.5% in the parent index then for such countries the active country upper bound of +5% is not applicable. When a country weighs less than 2.5% in parent index then the upper bound of country weight in the Index is set at three times of the country's weight in parent index.
[19] Defined in the MSCI Fixed Income Index Calculation Methodology.
[20] Based on credit rating scale defined in MSCI Fixed Income Index Calculation Methodology

2.4 Determining the Optimized Index

The Index is constructed using the Barra Open Optimizer[21]. The optimization uses universe of eligible securities and the specified optimization objectives and constraints to determine the constituents of the Indexes. The decarbonization trajectory of the indexes is defined in Appendix IV.

2.5 Treatment for entities not covered by MSCI ESG Research

All securities that are not excluded by the specified ESG-based exclusion criteria are eligible for inclusion in the index.

For the treatment of unrated companies in the calculation of target metrics for the optimization, please refer to Appendix III.

[21] Please refer to Appendix V for more details.

3 Index Rebalancing & Maintenance

- The composition of the Indexes is reviewed monthly, with an effective rebalancing impact on the first business day of the month (termed as "Rebalancing Date"). For clarification, bonds are added to the Index on the closing of the last business day of every month, however, the return impact is on the first business day of the month.
- Change in the Index composition is based on the latest[22] data available as of three days prior to the Rebalancing Date, which is defined as the Cut-Off Date. Any inclusion or exclusion criteria satisfied for a given security in the universe, after the Cut-Off Date, will generally become effective at the following monthly rebalancing; should conditions remain unchanged. In exceptional cases, for instance, cases of input data correction, MSCI can reduce the Cut-Off Date for Index rebalancing from T-3 to T-2, T-1, or T. In such instances, MSCI will notify Index clients of such changes via announcement.
- MSCI will disclose proforma Index rebalancing results starting the second business day of each month. MSCI will freeze the pro forma Index rebalancing results as of the Cut-Off Date.
- Bonds are added to or deleted from the Index only on monthly rebalancing dates. For the existing Index components any changes to Index eligibility will only be reflected in the next monthly rebalancing.
- Any inclusion or exclusion criteria satisfied for a given security in the universe, after the Cutoff Date, will generally become effective at the following monthly rebalancing; should conditions remain unchanged.
- Any cash that accrues within the Index in each month is re-invested on a pro-rata basis across the Index constituents, on the Rebalancing Date. In essence, cash in the Index is swept out on rebalancing and the opening Index portfolio on the Rebalancing Date starts with zero accrued cash balance.
- Specific variants of total return calculation of the Index on the Rebalancing Date may be adjusted for transaction costs[23] as securities are added to the Index at the offer price.

For further information on Index total return calculation and corporate events handling please refer to the MSCI Fixed Income Index Calculation Methodology[24]. For the holiday calendar used in the Indexes, please refer to the MSCI Fixed Income Data Methodology[25]. MSCI leverages the GICS®[26] sector classification framework for MSCI Corporate Bond Indexes as well. Please refer to MSCI GICS Methodology[27] for details.

[22] ESG and Climate data will utilize the most recent, quality-assured information available. For index rebalancing, the latest data that has successfully undergone quality assurance checks will be employed. In cases where recent data changes are still undergoing verification, only data that has passed the quality assurance process will be considered
[23] Refer to the MSCI Fixed Income Index Calculation Methodology for detail. Available at https://www.msci.com/Index-methodology
[24] Refer to the MSCI Fixed Income Index Calculation Methodology for detail. Available at https://www.msci.com/Index-methodology
[25] The methodologies are available at: https://www.msci.com/Index-methodology.
[26] GICS, the global industry classification standard jointly developed by MSCI Inc. and S&P Dow Jones Indices
[27] The GICS methodology is available at: https://www.msci.com/gics

4 MSCI ESG Research

The Indexes are products of MSCI Inc. that utilize information such as company ratings and research produced and provided by MSCI ESG Research LLC (MSCI ESG Research), a subsidiary of MSCI Inc. In particular, the Indexes use the following MSCI ESG Research products: MSCI Climate Change Metrics, MSCI Impact Solutions, MSCI Climate Value-At-Risk, ESG Sustainable Impact Metrics, ESG Controversies, and ESG Business Involvement Screening Research. MSCI Indexes are administered by MSCI Limited and MSCI Deutschland GmbH.

4.1 MSCI Climate Change Metrics

MSCI Climate Change Metrics provide 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.

4.1.1 Fossil Fuels and Power Generation Metrics

MSCI ESG Research identifies companies involved in fossil fuel-related assets and activities including fossil fuel reserves, resource extraction, power generation and generation capacity, revenue from such assets and activities and capital investments in such assets and activities. The metrics are based on disclosed activities, disclosed revenue and estimates of revenue that are extrapolated from company disclosures and eligible third-party sources (such as NGOs).

4.1.2 Greenhouse Gas (GHG) Emissions

MSCI ESG Research collects reported emissions and uses proprietary estimation methodologies that follows the GHG Protocol in including carbon dioxide (CO2) and the five other principal GHGs: hydrofluorocarbons (HFCs), methane (CH4), nitrous oxide (N2O), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6). Emissions of these other gases are accounted for in terms of the quantity of CO2 that has an equivalent global warming potential.

4.1.3 Low-Carbon Transition (LCT) Risk Assessment

MSCI ESG Research's LCT data assesses companies' exposure to risks and opportunities related to the low-carbon transition (the transition) based on the carbon-intensive nature of their business lines. In particular, in the event that the transition takes place, demand for carbon-intensive products would decline in favor of low- and zero-carbon products, which would put carbon-intensive companies and industries (for example, coal-based power generation and coal mining) at risk of having stranded assets over the long term (5+ years). MSCI ESG Research considers a company exposed to low-carbon transition risks and opportunities through two main transmission channels: (1) exposure through involvement in carbon-intensive operations, and (2) exposure through involvement in or solutions for carbon-intensive products.

4.1.4 Climate Value-at-Risk

Climate VaR provides a forward-looking and return-based valuation assessment to measure climate related risks and opportunities. Climate VaR is a quantitative assessment calculated at the company and security level. The aggregated company Climate VaR is calculated as a percentage of market value (from -100% to +100%) for multiple climate scenarios and includes the valuation impacts arising from technology opportunities, policy risks and physical risks. The Climate VaR model uses a data-driven approach, examining a company's positioning within its industry and the regions where it operates. It considers the potential costs and profits associated with different climate scenarios, including the impacts of carbon pricing, regulatory changes, and physical climate events. By simulating these scenarios, the model estimates how climate change could affect a company's financial performance and overall valuation.

4.2 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

Pillar	Themes	Categories
		6. Sustainable agriculture
Social Impact	Basic needs	7. Nutrition 8. Major Disease Treatment 9. Sanitation 10. Affordable Real Estate
	Empowerment	1. SME Finance 2. Education 3. 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.

4.3 MSCI ESG Controversies

MSCI ESG Controversies provides assessments of controversies concerning the 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.

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

4.4 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.

For more details on MSCI ESG Business Involvement Screening Research, please refer to https://www.msci.com/legal/disclosures/esg-disclosures.

Appendix I: MSCI Low Carbon Transition Risk Assessment

MSCI ESG Research's Low Carbon Transition Risk assessment[28] is designed to identify potential leaders and laggards by holistically measuring companies' exposure to and management of risks and opportunities related to the low carbon transition.

The outputs of this assessment are two company-level factors:

1) **Low Carbon Transition Category**: This factor groups companies in five categories that highlight the predominant risks and opportunities they are most likely to face in the transition (Exhibit 1).
2) **Low Carbon Transition Score**: This score is based on a multi-dimensional risks and opportunities assessment and considers both predominant and secondary risks a company faces. It is industry agnostic and represents an absolute assessment of a company's position vis-à-vis the transition

Exhibit 1: Low Carbon Transition Categories and Scores

<table>
<tr><th>LOW CARBON TRANSITION SCORE</th><th colspan="2">LOW CARBON TRANSITION CATEGORY</th><th>LOW CARBON TRANSITION RISK / OPPORTUNITY</th><th>INDUSTRY EXAMPLES</th></tr>
<tr><td rowspan="4">SCORE = 0
SCORE = 10</td><td colspan="2">ASSET STRANDING</td><td>Potential to experience "stranding" of physical / natural assets due to regulatory, market, or technological forces arising from low carbon transition.</td><td>Coal mining & coal-based power generation; industries in the Oil & Gas value chain</td></tr>
<tr><td rowspan="2">TRANSITION</td><td>PRODUCT</td><td>Reduced demand for carbon-intensive products and services. Leaders and laggards are defined by the ability to shift product portfolio to low-carbon products.</td><td>Petrol/diesel-based automobile manufacturers</td></tr>
<tr><td>OPERATIONAL</td><td>Increased operational and/or capital cost due to carbon taxes and/or investment in carbon emission mitigation measures leading to lower profitability of the companies.</td><td>Cement, Steel</td></tr>
<tr><td colspan="2">NEUTRAL</td><td>Limited exposure to low carbon transition carbon risk. Though companies in this category could have exposure to physical risk and/or indirect exposure to low carbon transition risk via lending, investment etc.</td><td>Consumer Staples, Healthcare</td></tr>
</table>

[28] For more details on MSCI Climate Change Metrics: https://www.msci.com/climate-solutions.

	SOLUTIONS	Potential to benefit through the growth of low-carbon products and services.	Renewable electricity, Electric vehicles, Solar cell manufacturers

Calculation methodology

The Low Carbon Transition Categories and Scores are determined by a combination of each company's current risk exposure and its efforts to manage the risks and opportunities presented by the low carbon transition. The 3-step process followed by MSCI ESG Research is explained below.

Step 1: Measure Low Carbon Transition Risk Exposure

The first step towards measuring the Low Carbon Transition Risk Exposure for a company is the computation of its Carbon Intensity profile – which is informed by its Product Carbon Intensity, Operational Carbon Intensity and Total Carbon Intensity. In the next step, we compute Low Carbon Transition Risk Exposure Category and Score based on Total Carbon Intensity.

Step 2: Assess Low Carbon Transition Risk Management

In the second step, we assess a company's management of risks and opportunities presented by the low carbon transition. This assessment is based on policies and commitments to mitigate transition risk, governance structures, risk management programs and initiatives, targets and performance, and involvement in any controversies.

Step 3: Calculate Low Carbon Transition Category and Score

In the final step, the Low Carbon Transition Risk Exposure Category and Score that was calculated in Step 1 are adjusted for the strength of management efforts. Following this adjustment, Low Carbon Transition Risk Exposure Score of companies with top or second quartile risk management improves and some top and second quartile companies may move up one category

Appendix II: MSCI Climate Value-At-Risk

The MSCI Climate Value-At-Risk measurement helps investors to assess future costs related to climate change and understand what those future costs could mean in the current valuation of securities. The premise of Climate Value-At-Risk is to aggregate costs related to specific climate risks and calculate what these costs might signify about financial performance into the foreseeable future.

1.5°C Aggregated Policy Risk Debt Climate VaR (REMIND NGFS Orderly) [%]

A company's debt aggregated downside policy risk exposure according to all emission sources (Scope 1, 2, 3), expressed as a percentage of the company's debt market value, assuming a global 1.5°C target and using carbon prices from the REMIND model under the NGFS Orderly scenario. Please refer to the Climate VaR methodology document for further details on scenario options.

1.5°C Technology Opportunity Debt Climate VaR (REMIND NGFS Orderly) [%]

A company’s debt upside technology opportunity exposure, expressed as a percentage of the company’s debt market value, assuming a global 1.5°C target and calculated using carbon prices from the REMIND model under the NGFS Orderly scenario. Please refer to the Climate VaR methodology document for further details on scenario options.

4°C Aggregated Physical Risk Debt Climate VaR (IPCC SSP3-7.0, Aggressive Outcome) [%]

A company’s debt "worst-case" (95th percentile) downside or upside potential, expressed as a percentage of the company’s debt market value, assuming trends in extreme cold, extreme heat, extreme precipitation, heavy snowfall, extreme wind, coastal flooding, fluvial flooding, river low flow, tropical cyclones and wildfires continue along the 4°C IPCC SSP3-7.0 scenario.

Appendix III: Calculation of Target Metrics

Calculation of absolute GHG Emission

For Parent Index constituents where the Scope 1+2+3 absolute GHG Emission is not available, the average Scope 1+2+3 absolute GHG Emission of all the constituents of the Parent Index in the same GICS Industry Group in which the constituent belongs, is used.

Security Level absolute GHG Emission =

$$Scope\ 1 + 2 + 3\ Carbon\ Emissions$$

Weighted Average absolute GHG Emission of Parent Index =

$$\sum (Weight\ in\ Parent\ Index * \ Security\ Level\ GHG\ Emission)$$

Weighted Average absolute GHG Emission of Derived Index =

$$\sum (Index\ Weight * \ Security\ Level\ GHG\ Emission)$$

Calculation of Potential Carbon Emissions

If Potential Carbon Emission data is not available, MSCI uses zero fossil fuel reserves.

Security Level Potential Carbon Emissions (PCE) =

$$Security\ Level\ PCE$$

Weighted Average Potential Emissions of Parent Index =

$$\sum (Weight\ in\ Parent\ Index * \ Security\ Level\ PCE)$$

Weighted Average Potential Emissions Emission of Derived Index =

$$\sum (Index\ Weight * \ Security\ Level\ PCE)$$

Calculation of Average Decarbonization

On average, the Indexes follow a 10% decarbonization trajectory since the Base Date. The Weighted Average absolute GHG Emission at the Base Date (W1) is used to compute the target

Weighted Average absolute GHG Emission at any given Monthly Index Review (Wt) as per the below formula.

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

Where ‘t’ is the number of Monthly Index Reviews since the Base Date.

Thus, for the 13th Monthly Index Review since the Base Date (t=13), the target Weighted Average absolute GHG Emission will be W1*0.90.

Companies Setting Targets

Relative to their corresponding Parent Indexes, the Indexes require a minimum 20% increase in the aggregate weight of companies setting emissions reduction targets

- Companies publishing emissions reduction targets
- Companies publishing their annual emissions and
- Companies reducing their absolute GHG emission by 7% over each of the last 3 years

Calculation of Green Revenue to Fossil fuel-based Revenue Multiple:

Green Revenue:

For each constituent in the Parent Index, the Green Revenue% is calculated as the cumulative revenue (%) from the six Clean Tech themes which are as follows:

- Alternative Energy – products and services that support the transmission, distribution and generation of renewable energy and alternative fuels to reduce carbon and pollutant emissions in supporting affordable and clean energy to combat climate change.
- Energy Efficiency – products, and services that support the maximization of productivity in labor, transportation, power and domestic applications with minimal energy consumption to ensure universal access to affordable, reliable and modern energy services.
- Sustainable Water – products, services, infrastructure projects and technologies that resolve water scarcity and water quality issues, through minimizing and monitoring current water demand, improving the quality and availability of water supply to improve resource management in both domestic and industrial use.
- Green Building – design, construction, redevelopment, retrofitting, or acquisition of green-certified properties to promote mechanisms for raising capacity for effective climate change mitigation and adaptation.
- Pollution Prevention – products, services, infrastructure projects and technologies that reduces volume of waste materials through recycling, minimizes introduction of toxic

substances, and offers remediation of existing contaminants such as heavy metals and organic pollutants in various environmental media to significantly address pollution in all levels and its negative effects.
- Sustainable Agriculture - revenues from forest and agricultural products that meet environmental and organic certification requirements to address significantly biodiversity loss, pollution, land disturbance, and water overuse.

The Weighted Average Green Revenue% is calculated as:

$$= \sum (Weight\ in\ Index * \ Green\ Revenue\%)$$

Fossil fuel-based Revenue:

For each constituent in the Parent Index, the Fossil fuel-based Revenue% is calculated as the cumulative revenue (%) from the following sources:

- Revenue% (either reported or estimated) 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 (either reported or estimated).
- Revenue% from the extraction, production and refining of Conventional and Unconventional Oil & Gas. Conventional Oil and Gas includes Arctic onshore/offshore, deep water, shallow water and other onshore/offshore. Unconventional Oil and Gas includes oil sands, oil shale (kerogen-rich deposits), shale gas, shale oil, coal seam gas, and coal bed methane.
- Revenue% from thermal coal based power generation, liquid fuel based power generation and natural gas based power generation.

The Weighted Average Fossil fuel-based Revenue% is calculated as:

$$= \sum (Weight\ in\ Index * \ Fossil\ fuel - based\ Revenue\%)$$

The Green Revenues to Fossil fuel-based Revenues multiple for either the Parent Index or the Index is calculated as a ratio of the Weighted Average Green Revenue to the Weighted Average Fossil fuel-based Revenue as per the formula below:

$$= \frac{Weighted\ Average\ Green\ Revenue\%}{Weighted\ Average\ Fossil\ fuel - based\ Revenue\%}$$

Aggregate Climate Value-at-Risk (VaR):

The Index-level Aggregate Climate Value-at-Risk for any Index is calculated as the sum of the below 3 components:

1. **Policy Risk Climate VaR [29](1.5 Degrees)**: Weighted average of security level 1.5°C Aggregated Policy Risk Debt Climate VaR (REMIND NGFS Orderly) [%]
2. **Technology Opportunities Climate VaR (1.5 Degrees)**: Weighted average of security level 1.5°C Technology Opportunity Debt Climate VaR (REMIND NGFS Orderly) [%]
3. **Extreme Weather Climate VaR (Aggressive Scenario)**: Weighted average of security level Aggregated Physical Risk Debt Climate VaR (IPCC SSP3-7.0, Aggressive Outcome) [%]

[29] Starting from the May 2020 Monthly Index Review, the Policy Risk Climate VaR used in the Indexes incorporate Scope 2 and Scope 3 emissions as well. The Policy Risk Climate VaR used in the May 2020 Monthly Index Review of the Indexes is as of September 30, 2020.

Appendix IV: Decarbonization Trajectory of Indexes

The Weighted Average absolute GHG Emission on the Base Date (W_1) is used to compute the target Weighted Average absolute GHG Emission at any given Monthly Index Review (W_t) as per the below formula.

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

Where 't' is the number of Monthly Index Reviews since the Base Date. The table below shows the Weighted Average absolute GHG Emission on the Base Date(W_1) for each of the regions where the Indexes are constructed:

Index	Parent Index	Base Date[30]	W_1 (in mn tCO2e)
MSCI USD IG ESG Climate Paris Aligned Corporate Bond Custom Index	MSCI USD IG Corporate Bond Custom Index	July 01, 2021	27.43
MSCI EUR IG ESG Climate Paris Aligned Corporate Bond Custom Index	MSCI EUR IG Corporate Bond Index	July 01, 2021	23.61

[30] At a given Monthly Index Review, if there is significant change in the calculation methodology of absolute GHG emission, the EU delegated acts allows for selection of a new base date.

Appendix V: New release of Barra® Optimizer

A major new release of the relevant Barra Optimizer may replace the former version within a suitable timeframe.

Appendix VI: ESG-based Exclusion Criteria

1. <u>Controversial Weapons:</u>

All companies with any tie to Controversial Weapons as defined below:

- **Cluster Bombs**
  - MSCI ESG Research's cluster bomb research identifies companies that are involved in the production of cluster bombs and munitions, or the essential components of these products.
- **Landmines**
  - MSCI ESG Research's landmines research identifies companies that are involved in the production of anti - personnel landmines, anti - vehicle landmines, or the essential components of these products.
- **Depleted Uranium Weapons**
  - MSCI ESG Research's depleted uranium weapons research identifies companies involved in the production of depleted uranium weapons and armor.
- **Chemical and Biological Weapons**
  - MSCI ESG Research's chemical and biological weapons research identifies companies that are involved in the production of chemical and biological weapons, or the essential components of these products.
- **Blinding Laser Weapons**
  - MSCI ESG Research's blinding laser weapons research identifies companies that are involved in the production of weapons utilizing laser technology to cause permanent blindness.
- **Non-Detectable Fragments**
  - MSCI ESG Research's non-detectable fragments research identifies companies that are involved in the production of weapons that use non-detectable fragments to inflict injury.
- **Incendiary Weapons (White Phosphorus)**
  - MSCI ESG Research's incendiary weapons research identifies companies that are involved in the production of weapons using white phosphorus

Involvement criteria:

- Producers of weapons
- Producers of key components of the weapons (only applies to cluster bombs, landmines, depleted uranium weapons as well as chemical and biological weapons)
- Ownership of 20% or more of a weapons or components producer

The minimum limit is raised to 50% for financial companies having an ownership in a company that manufactures controversial weapons or key components of controversial weapons

- Owned 50% or more by a company involved in weapons or components production

Revenue limits:

- Any identifiable revenues, i.e., zero tolerance

2. **ESG Controversies:** All companies having faced very severe controversies pertaining to ESG issues – Defined as companies with an ESG Controversy Score of 0.

3. **Tobacco**: All companies classified as a "Producer". All companies deriving 5% or more aggregate revenue from the production, distribution, retail, supply and licensing of tobacco-related products. All companies deriving 5% or more aggregate revenue from the manufacture of tobacco products.

4. **Environmental Harm**: All companies having faced very severe and severe controversies pertaining to Environmental issues – Defined as companies with an Environment Controversy Score of 0 or 1.

5. **Thermal Coal Mining**: All companies deriving any revenue (either reported or estimated) 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 (either reported or estimated).

6. **Oil & Gas:** All companies deriving 10% or more revenue from oil and gas related activities, including distribution / retail, equipment and services, extraction and production, petrochemicals, pipelines and transportation and refining but excluding biofuel production and sales and trading activities.

7. **Power Generation**: All companies deriving 50% or more revenue from thermal coal-based power generation, liquid fuel-based power generation and natural gas-based power generation.

8. **Civilian Firearms**: All companies classified as "Producer" of firearms and small arms ammunitions for civilian markets. It does not include companies that cater to the military, government, and law enforcement markets. All companies deriving 5% or more aggregate

revenue from the production and distribution (wholesale or retail) of firearms or small arms ammunition intended for civilian use.

9. **Nuclear Weapons**: All companies that manufacture nuclear warheads and/or whole nuclear missiles. All companies that manufacture components that were developed or are significantly modified for exclusive use in nuclear weapons (warheads and missiles).All companies that manufacture or assemble delivery platforms that were developed or significantly modified for the exclusive delivery of nuclear weapons. All companies that provide auxiliary services related to nuclear weapons. All companies that manufacture components that were not developed or not significantly modified for exclusive use in nuclear weapons (warheads and missiles) but can be used in nuclear weapons. All companies that manufacture or assemble delivery platforms that were not developed or not significantly modified for the exclusive delivery of nuclear weapons but have the capability to deliver nuclear weapons. All companies that manufacture components for nuclear-exclusive delivery platforms.

10. **Adult Entertainment:** All companies deriving 5% or more revenue from the production of adult entertainment materials. All companies deriving 15% or more aggregate revenue from the production, distribution and retail of adult entertainment materials.

11. **Alcohol**: All companies deriving 5% or more revenue from the production of alcohol related products. All companies deriving 15% or more aggregate revenue from the production, distribution, retail and supply of alcohol-related products.

12. **Conventional Weapons**: All companies deriving 5% or more revenue from the production of conventional weapons and components. All companies deriving 15% or more aggregate revenue from weapons systems, components, and support systems and services.

13. **Gambling**: All companies deriving 5% or more revenue from ownership of operation of gambling-related business activities. All companies deriving 15% or more aggregate revenue from gambling related business activities.

14. **Genetically Modified Organisms (GMO):** All companies deriving 5% or more revenue from activities like genetically modifying plants, such as seeds and crops, and other organisms intended for agricultural use or human consumption.

15. **Nuclear Power**: All companies generating 5% or more of their total electricity from nuclear power in a given year. All companies that have 5% or more of installed capacity attributed to nuclear sources in a given fiscal year. All companies deriving 15% or more aggregate revenue from nuclear power activities.

16. **Nuclear Utilities**: All Companies the own or operate nuclear power plants.

17. **Fossil Fuel Reserves Ownership**: All companies with evidence of owning proven & probable coal reserves and/or proven oil and natural gas reserves used for energy purposes.

18. **Fossil Fuel Extraction**: All companies deriving any revenue (either reported or estimated) from thermal coal mining and unconventional oil and gas extraction.

19. **Thermal Coal Mining:** Revenue from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties. It does not cover 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.

20. **Unconventional Oil & Gas Extraction**: Revenue from oil sands, oil shale (kerogen-rich deposits), shale gas, shale oil, coal seam gas, and coal bed methane. It does not cover all types of conventional oil and gas production including Arctic onshore/offshore, deep water, shallow water and other onshore/offshore.

21. **Thermal Coal Power**: All companies deriving 5% or more revenue (either reported or estimated) from thermal coal-based power generation.

22. **ESG Rating**: Securities of companies having an MSCI ESG Rating of “CCC” and “B”.

Appendix VII: Methodology Set

The Indexes are governed by a set of methodology and policy documents ("Methodology Set"), including the present Index methodology document as mentioned below.

- Description of methodology set – https://www.msci.com/index/methodology/latest/FIInfo

- MSCI Fixed Income Data Methodology – https://www.msci.com/index/methodology/latest/FIDATA

- MSCI Fixed Income Calculation Methodology – https://www.msci.com/index/methodology/latest/FIINDEXCALC

- MSCI Fixed Income Glossary of Terms – https://www.msci.com/index/methodology/latest/FIGLOSS

- MSCI Fixed Income Index Policies – https://www.msci.com/index/methodology/latest/FIINDEXPOLICY

- MSCI Corporate Bond Indexes Methodology– https://www.msci.com/index/methodology/latest/FIIGCORP

- ESG Factors in Methodology*

The Methodology Set for the Indexes can be accessed from MSCI's webpage https://www.msci.com/index-methodology in the section 'Search Methodology by Index Name or Index Code'.

* 'ESG Factors in Methodology' contains the list of environmental, social, and governance factors considered, and how they are applied in the methodology (e.g., selection, weighting or exclusion). It can be accessed in the Methodology Set as described above.

Appendix VIII: Changes to the Document

The following sections have been updated effective **July 2025:**

- Added Section 2.5 to clarify treatment of companies with ratings and research not available from MSCI ESG Research.
- The ESG Research Product descriptions were updated in Section 4.
- Added Appendix VII to clarify details on the Methodology Set for the Index.
- Updated the branding template.

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