

Methodology Book For:
**- MSCI EUR Corporates IG Select
Index**
**- MSCI EUR Corporates IG Climate
Change ESG Select Index**

May 2023

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1 Introduction

The MSCI EUR Corporates IG Climate Change ESG Select Index (herein, the “Index”) is designed to represent the performance of a strategy that seeks systematic integration of environmental, social and governance (ESG) norms and reflect the opportunities and risks associated with the transition to a lower carbon economy in Investment Grade Corporate Bond investing and meets the minimum requirements of an EU Climate Transition Benchmark (CTB)¹.

The MSCI EUR Corporates IG Select Index (herein, the “Parent Index”) represents the underlying eligible universe of the Index and is constructed from a universe of corporate bonds denominated in EUR by applying selection criteria using country of domicile and security type based on coupon, seniority, maturity, age of bond, credit rating and bond size.

The MSCI EUR Corporates IG Climate Change ESG Select Index² is constructed from the Parent Index by incorporating business exclusion screens including Controversial Weapons, Nuclear Weapons, Conventional Weapons, Civilian Firearms, Tobacco, Thermal Coal, Unconventional Oil & Gas, Arctic Oil & Gas, Thermal Coal and Nuclear Based Power Generation, Uranium Mining, Carbon and Energy Consumption Intensity, Human Rights Concerns Controversies, ESG Controversy Score, Environment Controversy Score and ESG Rating³. Additionally, companies that are not in compliance with the United Nations Global Compact principles are also excluded from the index.

Securities are selected by applying a liquidity screen within each sector-maturity bucket, followed by security selection based on target count and highest MSCI Low Carbon Transition⁴ (LCT) scores within each sector-maturity tier⁵. A security selection buffer of 50% is applied during the security selection and the resulting constituents are weighted in proportion of their weights in the Parent Index.

Securities are subsequently reweighted or excluded using an optimization-based approach to meet the minimum standards⁶ of the EU Climate Transition Benchmark (CTB) while capping the weight of issuers in the index at 4%.

¹ EU Climate Transition Benchmarks (CTBs) were introduced by the regulation (EU) 2016/1011 as amended by Regulation (EU) 2019/2089, which sets out the minimum standards for such indexes. In case there are changes in the EU delegated acts ([Regulation \(EU\) 2016/1011 as amended by Regulation \(EU\) 2019/2089](#)) 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.

² The Indexes are governed by a set of methodology and policy documents (“Methodology Set”), including the present index methodology document. 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’. The Methodology Set includes a document ‘ESG Factors in Methodology’ that contains the list of environmental, social, and governance factors considered, and how they are applied in the methodology (e.g., selection, weighting or exclusion).

³ Please refer to Appendix II for detailed ESG exclusion criteria.

⁴ Please refer to Appendix IV: MSCI Low Carbon Transition Risk Assessment and <https://www.msci.com/climate-change-solutions> for further details regarding the MSCI Low Carbon Transition score and category.

⁵ There are 33 sector-maturity tiers corresponding to 11 GICS sectors and 3 Maturity tiers (1-4 years, 4-7 years and 7-10 years).

⁶ Minimal requirements include ESG exclusions based on involvement in Controversial Weapons businesses, Very Severe ESG Controversies, Severe Environmental Controversies and Tobacco Manufacturing as defined in Appendix II, 30% reduction in Scope 1+2+3 carbon emission relative to Parent Index and 7% reduction in Scope 1+2+3 carbon emission per year relative to the base date.

2 Constructing the MSCI EUR Corporates IG Select Index

2.1 Eligibility Criteria

The MSCI EUR Corporates IG Select Index is constructed from a universe of bonds denominated in EUR issued by corporates⁷. The eligible bonds are selected from the corporate bond universe by applying the following criteria⁸:

2.1.1 Country of Domicile

Securities included in the MSCI EUR Corporates IG Select Index must belong to issuers domiciled in developed market countries⁹ defined in Appendix I.

2.1.2 Security Type

The Only Plain Vanilla Bonds¹⁰ with the following features are eligible for inclusion in the MSCI EUR Corporates IG Select Index:

- **Coupon:** Only securities with fixed coupons are eligible.
- **Seniority:** Only Senior issues are eligible.
- **Maturity:** Each index constituent must have a maturity greater than or equal to 1.5 years as measured from the Effective Date¹¹. Each index constituent must also have a maturity less than or equal to 10 years as measured from the Effective Date.
- **Age of security:** Each bond must have an issuance date less than or equal to 3 years prior to the Effective Date.
- **Credit Rating:** Each bond must have a minimum rating of Baa3 / BBB- as rated by Moody's / S&P. For bonds that are rated by both S&P and Moody's, the lower rating will be used to determine the index eligibility criteria.
- **Security size threshold:** Each bond must have a notional amount outstanding greater than or equal to Euro 500 million.
- **Private Placement:** All private placement bonds are excluded.

⁷ Corporate issuers classified as government owned as per MSCI data vendors are excluded from the index.

⁸ MSCI leverages the GICS® sector classification framework for construction of the respective Parent Indexes of the MSCI ESG Climate Solutions Select Indexes and. Please refer to MSCI GICS Methodology for details. The GICS methodology is available at: <https://www.msci.com/gics>

⁹ The list of developed market countries is defined in the MSCI Corporate Bond Indexes Methodology within Appendix I: MSCI Developed Market Universe.

¹⁰ Plain Vanilla Bonds have fixed Coupon Rate and Time of Coupon Payments, fixed Date of Maturity, fixed Face Value/Par Value.

¹¹ Defined in Section 5.1

- **Corporate Event:** Eligible constituents in the index must not have any known corporate events which will result in notional amount outstanding of the bond falling below the minimum bond size criteria over the next 1 month as measured from the Rebalancing Date.
- **Weighting:** Index constituents will be weighted by market value¹² within the index.
- **Settlement¹³:** MSCI applies same-day (T+0) index settlement convention, unless otherwise specified.

¹² Please refer to MSCI Fixed Income Index calculation methodology for further details on calculation of market value.

¹³ Please refer to definition of "Settlement Date" in "MSCI Fixed Income Index – Glossary of Terms" available at: <https://www.msci.com/index-methodology>

3 Constructing the MSCI EUR Corporates IG Climate Change ESG Select Index

Constructing the MSCI EUR Corporates IG Climate Change ESG Select Index involves the following steps:

- Defining the Eligible Universe
- Defining the ESG Screening Criteria
- Defining the Liquidity Screening Criteria
- Defining the Security Selection Criteria
- Determining the Index Weights
- Defining the Optimized Index
- Determining the Optimized Index

3.1 Defining the Eligible Universe

The Eligible Universe for the MSCI EUR Corporates IG Climate Change ESG Select Index is defined by the constituents of the universe defined in Section 2.

3.2 Defining the ESG Screening Criteria

The universe of securities after applying the above steps is divided into 33 sector-maturity buckets corresponding to 11 GICS sectors and 3 Maturity buckets (1-4 years, 4-7 years and 7-10 years). Within each sector-maturity bucket, the security with highest notional amount outstanding within each issuer is selected.

3.3 Defining the liquidity Screening Criteria

The screening criteria defined in Appendix II is applied to the Eligible Universe. The remaining securities are eligible for inclusion in the Index. The exclusions are based on the data provided by MSCI ESG Research and are determined quarterly coinciding with the rebalance frequency of the Index.

3.4 Defining the Security Selection Criteria

- A target security selection count is determined for each sector-maturity bucket based on the below criteria by applying an initial target count of 100 for the index:
 - If the universe after the liquidity screening criteria step above has 400 bonds and using 100 as the initial target count of the Index, the target security count % applicable to each sector-maturity bucket is determined as: $100/400 = 25\%$. This implies 25% by count (rounded up) of each sector-maturity bucket will be selected in the Index. Due to the rounding up within each sector-maturity bucket, the final count of securities in the Index may be more than 100.
- The target count of securities determined above, are selected from each sector-maturity bucket based on highest LCT score.

- A security selection buffer of 50% is applied during security selection within each sector-maturity bucket (explained in Appendix III).

3.5 Determining the index weights

- A The securities eligible for inclusion in the Index, are weighted in proportion of their weights in the Parent Index which is market value weighted.
- The maximum weight of any issuer in the Index is capped at 4% in accordance with the MSCI Capped Indexes methodology¹⁴.

3.6 Defining the Optimized Index

Securities from the above step are selected and weighted following an optimization-based approach which aims to minimize active share¹⁵ relative to the Parent Index subject to the following constraints:

1. Climate objectives – constraints detailed in Table 1
2. Diversification objectives – constraints detailed in Table 2

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

Table 1: Constraints imposed to meet climate objectives

No.	Climate Objectives	MSCI EUR Corporates IG Climate Change ESG Select Index
1.	Minimum reduction in absolute Greenhouse Gas (GHG) Emission ¹⁶ (Scope 1+2+3) relative to Parent Index	30%
2.	Minimum average reduction (per annum) in absolute GHG Emission relative to absolute GHG Emission at the Base Date ¹⁷	7%

¹⁴ Please refer to the MSCI Capped Indexes methodology at www.msci.com/index-methodology

¹⁵ Active Share is defined as the one-way turnover of the Index relative to the Parent Index. Active Share minimization is achieved by minimizing the sum of squared active weights.

¹⁶ Based on EU delegated acts, absolute GHG Emissions may be used as a measure of carbon exposure for fixed income indexes.

¹⁷ The decarbonization trajectory and base date of the Index is defined in Appendix VI.

Table 2: Constraints imposed to meet diversification objectives

No.	Diversification Objective	MSCI EUR Corporates IG Climate Change ESG Select Index
3.	Constituent Active Weight	+/- 2%
4.	Issuer capping	4%
5.	Security Weight as a multiple of its weight in the Parent Index	10x
6.	Minimum number of constituents	100

During the 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 maximum security weight multiple constraint in steps of 2 up to 20

In the event that no optimal solution is found after the above constraint relaxation is exhausted, the relevant Index will not be rebalanced for that Index Review.

3.7 Determining the Optimized Index

The Index is constructed using the Barra Open Optimizer¹⁸. The optimization uses universe of eligible securities and the specified optimization objectives and constraints to determine the constituents of the Index.

¹⁸ Please refer to Appendix VII for more details.

4 Maintaining the MSCI EUR Corporates IG Select Index

Quarterly Index Review

The MSCI EUR Corporates IG Select Index is reviewed on a quarterly basis, with the Effective Date being the first business day of February, May, August and November¹⁹. In general, the pro forma indexes are announced three business days before the effective date.

In general, MSCI uses latest available MSCI ESG Research data on the announcement date for the rebalancing of the MSCI EUR Corporates IG Select Index.

At each Index Review, the composition of the Index is reassessed based on the methodology described in Section 2.

Any inclusion or exclusion criteria satisfied for a given security in the universe, after the cut-off date (T-3), will generally become effective at the following quarterly rebalancing; should conditions remain unchanged.

Any cash that accrues within the index in each quarter is re-invested on a pro-rata basis across the index constituents, on the effective date of rebalancing. 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.

For further information on index total return calculation and corporate events handling please refer to the MSCI Fixed Income Index Calculation Methodology²⁰. For the holiday calendar used in the index, please refer to the MSCI Fixed Income Data Methodology²¹.

¹⁹ Prior to Mar 28, 2022, the effective dates coincided with the first business day of January, April, July and October. From Mar 28, 2022, onwards, the effective dates coincided with the first business day of February, May, August and November.

²⁰ Refer to the MSCI Fixed Income Index Calculation Methodology for detail. Available at <https://www.msci.com/index-methodology>

²¹ Refer to the MSCI Fixed Income Data Methodology for detail. Available at <https://www.msci.com/index-methodology>

5 Maintaining the MSCI EUR Corporates IG Climate Change ESG Select Index

The MSCI EUR Corporates IG Climate Change ESG Select Index is reviewed on a quarterly basis, with the Effective Date being the first business day of February, May, August and November²². In general, the pro forma indexes are announced three business days before the effective date.

In general, MSCI uses latest available MSCI ESG Research data on the announcement date for the rebalancing of the MSCI EUR Corporates IG Climate Change ESG Select Index.

At each Index Review, the Eligible Universe is updated, and the composition of the index is reassessed based on the methodology described in Section 3.

²² Prior to Mar 28, 2022, the effective dates coincided with the first business day of January, April, July and October. From Mar 28, 2022, onwards, the effective dates coincided with the first business day of February, May, August and November.

6 Pricing

The Index construction from inception to March 31, 2021 is based on price sourced from Refinitiv only whereas the index construction from April 1, 2021 to July 30, 2021 is based on price sourced from both Refinitiv and IDC. The index construction after July 30, 2021 is based on prices sourced from Refinitiv only.

If an index constituent is no longer priced (intra-rebalancing) by the pricing source or the price is unavailable, the last available price is used.

7 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 ESG Ratings, MSCI ESG Controversies, MSCI ESG Business Involvement Screening Research and MSCI Climate Change Metrics. MSCI Indexes are administered by MSCI Limited.

7.1 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/esg-and-climate-methodologies>.

7.2 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/esg-and-climate-methodologies>.

7.3 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.

For more details on MSCI ESG Business Involvement Screening Research, please refer to http://www.msci.com/resources/factsheets/MSCI_ESG_BISR.pdf.

7.4 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.

For more details on MSCI Climate Change Metrics, please refer to <https://www.msci.com/climate-change-solutions>.

Appendix I: List of Eligible Developed Markets Countries

The MSCI ESG Leaders Indexes target 50% coverage of the free float-adjusted market capitalization of each GICS sector of the regional Parent Index. The underlying principle in the construction of the indexes is to achieve cumulative sector coverage closest to 50%, while aiming to maintain index stability.

Country of Domicile
Austria
Belgium
Denmark
Finland
France
Germany
Ireland
Italy
Luxembourg
Netherlands
Norway
Portugal
Spain
Sweden
Switzerland
United Kingdom

Appendix II: ESG-based Exclusion Criteria

Nuclear weapons:

- All companies that have an industry tie to nuclear weapons.

Conventional Weapons:

- All companies deriving 5% or more aggregate revenue from weapons systems, components, and support systems and services.

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.

Thermal Coal:

- All Companies deriving more than 0.00% 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 from internal power generation (e.g. in case of vertically integrated power producers); intra-company sales of mined thermal coal; and revenue from coal trading.
- All companies disclosing evidence of thermal coal production.

Unconventional Oil & Gas:

- Companies that derive more than 0.00% revenue from unconventional oil and gas. It includes revenues from oil sands, oil shale (kerogen-rich deposits), shale gas, shale oil, coal seam gas, and coal bed methane. It excludes all types of conventional oil and gas production including Arctic onshore/offshore, deep water, shallow water and other onshore/offshore.
- All companies that provide evidence of producing oil using the method of hydraulic fracking. This factor does not capture revenue from non-extraction activities (e.g. exploration, surveying, processing, refining); ownership of shale oil reserves with no associated extraction revenues; revenue from intra-company sales.
- All companies that provide evidence of producing gas using the method of hydraulic fracking. This factor does not capture revenue from non-extraction activities (e.g. exploration, surveying, processing, refining); ownership of shale gas reserves with no associated extraction revenues; revenue from intra-company sales.
- All companies that provide evidence of producing oil sands (mining or in situ). This factor does not capture revenue from non-extraction activities (e.g. exploration, surveying, processing, refining); ownership of oil sands reserves with no associated extraction revenues; revenue from intra-company sales.

Arctic Oil & Gas:

- All companies deriving more than 0.00% revenue (either reported or estimated) Arctic Oil production. The definition of Arctic is geographical and includes production activities north of the 66.5 latitude. This factor includes offshore or onshore oil production.
- All companies deriving more than 0.00% revenue (either reported or estimated) from Arctic Gas production. The definition of Arctic is geographical and includes production activities north of the 66.5 latitude. This factor includes offshore or onshore gas production.
- All companies that provide evidence of producing Arctic oil. This factor does not capture revenue from non-extraction activities (e.g. exploration, surveying, processing, refining); ownership of Arctic oil reserves with no associated extraction revenues; revenue from intra-company sales.
- All companies that provide evidence of producing Arctic gas. This factor does not capture revenue from non-extraction activities (e.g. exploration, surveying, processing, refining); ownership of Arctic gas reserves with no associated extraction revenues; revenue from intra-company sales.

International Norms:

- All companies that fail to be in compliance with the United Nations Global Compact principles.

ESG Controversy Score (“Red Flags”):

- All companies assessed as having involvement 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.

Environment Controversy Score (“Orange Flag” and “Red Flag”):

- All companies assessed as having involvement in environmental controversies that are classified as Red (MSCI Environmental Controversy Score of 0) or Orange Flags (score of 1).
 - 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.

ESG Rating:

- All companies having an MSCI ESG Rating of “CCC” or “B”.
- All companies having missing MSCI ESG Rating.

Civilian Firearms:

- All companies deriving 5% or more of revenue, or maximum estimated percent, from the manufacture and retail of civilian firearms and ammunition.

Missing Scores:

- All companies with missing LCT Score and ESG Score are excluded from the Index.

Controversial Weapons:

- All 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 Based Power Generation:

- All companies deriving more than 10% revenue (either reported or estimated) from thermal coal-based power generation.

Nuclear Based Power Generation:

- All companies deriving more than 5% of revenue, or maximum estimated percent, from nuclear power activities.
- All companies deriving more than 5% revenue, or maximum estimated percent, from supplying key nuclear-specific products or services to the nuclear power industry.

Uranium Mining:

- All companies deriving more than 5% revenue (recent-year percent of revenue or maximum estimated percent) from the mining of Uranium.

Carbon Intensity (Carbon Emissions - Scope 1+2 / USD million sales):

- All companies having a carbon intensity more than 1500 (most recently reported or estimated) measured using the company's Scope 1 + Scope 2 greenhouse gas emissions normalized by sales in million USD.

Energy Consumption Intensity (GWh / EUR million sales):

- All companies having an energy consumption (GWh) per million EUR revenue of more than 300.

Human Rights Concerns Controversies:

All companies having more than one Severe or Very Severe controversy cases in the last three years related to human rights violations issues.

Appendix III: Security Selection Buffer Example

A security selection buffer of 50% is applied during the on-going index review. For example, assume it is required to select 40 securities from a specific sector-maturity bucket, then buffers are applied between ranks 21 and 60. The securities in the eligible universe (after applying the Liquidity Screening Criteria) with a LCT score ranked at or above 20 will be added to the Index on a priority basis. The existing constituents that have a LCT score rank between 21 and 60 are then successively added until the number of securities in the Index reaches 40. If the number of securities is below 40 after this step, the remaining securities in the eligible universe with the highest LCT score rank are added until the number of securities in the Index reaches 40.

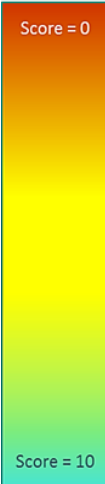
Appendix IV: MSCI Low Carbon Transition Risk Assessment

MSCI ESG Research’s Low Carbon Transition Risk assessment²³ 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

LOW CARBON TRANSITION SCORE	LOW CARBON TRANSITION CATEGORY		LOW CARBON TRANSITION RISK / OPPORTUNITY
 <p>Score = 0</p> <p>Score = 10</p>	ASSET STRANDING		Potential to experience “stranding” of physical / natural assets due to regulatory, market, or technological forces arising from low carbon transition.
	TRANSITION	PRODUCT	Reduced demand for carbon-intensive products and services. Leaders and laggards are defined by the ability to shift product portfolio to low-carbon products.
		OPERATIONAL	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.
	NEUTRAL		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.
	SOLUTIONS		Potential to benefit through the growth of low-carbon products and services.

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

²³ For more details on MSCI Climate Change Metrics: <https://www.msci.com/climate-change-solutions>

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 V: Calculation of Targets Metrics

Calculation of absolute GHG Emission

For Parent Index constituents where the Scope 1+2+3 Emission is not available, the average Scope 1+2+3 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 Average Decarbonization

On average, the Index follows a 7% decarbonization trajectory since the Base Date. The Weighted Average absolute GHG Emission at the Base Date (W_1) is used to compute the target Weighted Average absolute GHG Emission at any given Quarterly Index Review (W_t) as per the below formula.

$$W_t = W_1 * 0.93^{\frac{(t-1)}{4}}$$

Where 't' is the number of Quarterly Index Reviews since the Base Date.

Thus, for the 5th Quarterly Index Review since the Base Date (t=5), the target Weighted Average absolute GHG Emission will be $W_1 * 0.93$.

Appendix VI: 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 Quarterly Index Review (W_t) as per the below formula.

$$W_t = W_1 * 0.93^{\frac{(t-1)}{4}}$$

Where ‘t’ is the number of Quarterly Index Reviews since the Base Date. The table below shows the Weighted Average absolute GHG Emission on the Base Date(W_1) for the Index:

Index	Parent Index	Base Date ²⁴	W_1 (tCO2)
MSCI EUR Corporates IG Climate Change ESG Select Index	MSCI EUR Corporates IG Select Index	November 01, 2022	10165861.04

²⁴ At a given Index Review, if there is significant change in the calculation methodology of absolute GHG emission, the EU delegated acts allow for selection of a new base date.

Appendix VII: New release of Barra® Optimizer

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

Appendix VII: Changes to this Document

The following sections have been modified as of March 2022:

- Section 3 has been updated to reflect the additional criteria to exclude private placement bonds
- Section 6.1 has been updated to reflect the updated quarterly rebalancing calendar

The following sections have been modified as of April 2022:

- Appendix II has been updated to reflect updated and additional ESG-based exclusion criteria

The following sections have been modified as of October 2022:

- Introduction has been updated to reflect updated and additional ESG-based exclusion criteria as well as the objective of meeting the minimum requirements of EU Climate Transition Benchmark (CTB)
- Section 3 has been updated to clarify the index construction methodology of the Parent Index
- Section 4 has been updated to reflect the optimization constraints
- Section 5.1 has been updated to clarify the maintenance rules of the Parent Index
- Appendix IV, V, VI and VII have been added to define the MSCI Low Carbon Transition Risk Assessment, Calculation of Target Metrics, Decarbonization Trajectory and handling of new release of Barra Optimizer

The following sections have been modified as of May 2023:

- Introduction and Appendix II have been updated to reflect updated and additional ESG-based exclusion criteria
- Section 7 has been updated to reflect the latest ESG research product description.

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