Methodology Book For:

- MSCI EUR Corporates IG Select Index

- MSCI EUR Corporates IG Climate Change ESG Select Index

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Contents

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 Index[2] 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, Oil and Gas Extraction and Production, Oil and Gas Related Activities, Fossil Fuel based Power Generation, Thermal Coal Distribution Involvement, Carbon and Energy Consumption Intensity, Human Rights Concerns Controversies, ESG Controversy Score, Environment Controversy Score and ESG Rating[3]. 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 Transition[4] (LCT) scores within each sector-maturity tier[5]. 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 standards of the EU Climate Transition Benchmark (CTB) while capping the weight of issuers in the index at 4%.

[1] On December 3, 2020, the European Commission has published the delegated acts in the Official Journal (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R1818&from=EN) which contain the minimum technical requirements for the EU Climate Transition Benchmarks and EU Paris-Aligned Benchmarks. 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.

[2] The Indexes are governed by a set of methodology and policy documents ("Methodology Set"), including the present index methodology document. Please refer to Appendix VIII for more details.

[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).

2. Index Construction Methodology

2.1 Constructing the MSCI EUR Corporates IG Select Index

2.1.1. Eligibility Criteria

The Parent Index is constructed from a universe of bonds denominated in EUR issued by corporates[6]. The eligible bonds are selected from the corporate bond universe by applying the following criteria[7]:

2.1.2. Country of Domicile

Securities included in the Parent Index must belong to issuers domiciled in developed market countries[8] defined in Appendix I.

2.1.3. Security Type

Only Plain Vanilla Bonds[9] 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 Rebalancing Date[10]. Each index constituent must also have a maturity less than or equal to 10 years as measured from the Rebalancing Date.
- **Age of security**: Each bond must have an issuance date less than or equal to 3 years prior to the Rebalancing 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.

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

[7] 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

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

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

[10] Defined in Section 3.1

- **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 value[11] within the index.
- **Settlement[12]:** MSCI applies same-day (T+0) index settlement convention, unless otherwise specified.

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

The Index uses company ratings and research provided by MSCI ESG Research[13] for the Index construction.

Constructing the 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

2.2.1. Defining the Eligible Universe

The Eligible Universe for the Index is defined by the constituents of Parent Index.

2.2.2. Defining the ESG Screening Criteria

The screening criteria defined in Appendix II[14] are applied to the Eligible Universe. The remaining securities are eligible for inclusion in the Index. The exclusions are based on the data provided by

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

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

[13] 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.

[14] All securities that are not excluded by the specified MSCI ESG Business Involvement Screening Research (BISR) criteria are eligible for inclusion in the index.

MSCI ESG Research and are determined quarterly coinciding with the rebalance frequency of the Index.

2.2.3. Defining the Liquidity 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.

2.2.4. Defining the Security Selections Criteria

- A target security selection count (“Target 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).

2.2.5. Determining the Index Weights

- 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%.

2.2.6. Defining the Optimized Index

Securities from the above step are selected and weighted following an optimization-based approach which aims to minimize active share[15] 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

[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.

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%

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.

2.2.7. Determining the Optimized Index

The Index is constructed using the Barra Open Optimizer[18]. The optimization uses universe of eligible securities and the specified optimization objectives and constraints to determine the constituents of the Index.

[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.

[18] Please refer to Appendix VII for more details.

2.2.8. Treatment for entities not covered by MSCI ESG Research

All securities that are not excluded by the specified MSCI ESG Business Involvement Screening Research (BISR) or MSCI ESG Controversies criteria are eligible for inclusion in the index i.e., securities not covered by MSCI ESG BISR coverage or MSCI ESG Controversies coverage are also eligible for index inclusion.

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

3. Index Rebalancing & Maintenance

3.1 Quarterly Index Review

- The composition of the MSCI EUR Corporates IG Select Index and the MSCI EUR Corporates IG Climate Change ESG Select Index is reviewed quarterly, the first business day of February, May, August and November[19] (termed as Rebalancing Date). For clarification, bonds are added to the index on the closing of last business day of every quarter, however, the return impact is on the first business day of the quarter.
- Change in the Index composition is based on latest 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 quarterly 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 an announcement.
- Bonds are added to or deleted from the index only on quarterly rebalancing dates. For the existing index components any changes to index eligibility will only be reflected in the next quarterly rebalancing.
- 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 quarterly rebalancing, should conditions remain unchanged.
- Any cash that accumulates within the Index each quarter is re-invested on the Rebalancing Date according to Section 2.1 for MSCI EUR Corporates IG Select Index and Section 2.2 for the MSCI EUR Corporates IG Climate Change ESG Select Index.
- Specific variants of the total return calculation of the Index on the Rebalancing Date may be adjusted for transaction costs[20] as securities are added to the Index at the offer price.

For further information on the Index total return calculation and corporate events handling, please refer to the MSCI Fixed Income Index Calculation Methodology[21]. For the holiday calendar used in the Indexes, please refer to the MSCI Fixed Income Data Methodology[22].

MSCI uses the GICS®[23] sector classification framework for MSCI Corporate Bond Indexes. Please refer to MSCI GICS Methodology[24] for details.

[19] Prior to Mar 28, 2022, the rebalancing dates coincided with the first business day of January, April, July and October. From Mar 28, 2022, onwards, the rebalancing 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 Index Calculation Methodology for detail. Available at https://www.msci.com/index-methodology

[22] The methodologies are available at: https://www.msci.com/index-methodology.

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

[24] The GICS methodology is available at: https://www.msci.com/gics

4. Pricing

The Index construction from inception to March 31, 2021 was based on prices sourced from LSEG Data & Analytics (formerly Refinitiv) only, whereas the index construction from April 1, 2021 to July 30, 2021 was based on prices sourced from both LSEG Data & Analytics and ICE Data Services. The index construction after July 30, 2021 is based on prices sourced from LSEG Data & Analytics 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.

5. 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 and MSCI Deutschland GmbH.

5.1 MSCI ESG Ratings

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

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

5.2 MSCI ESG Controversies

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

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

5.3 MSCI ESG Business Involvement Screening Research

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

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

5.4 MSCI Climate Change Metrics

MSCI Climate Change Metrics provides climate data and tools to support institutional investors seeking to integrate climate risk and 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.

5.4.1. 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).

5.4.2. Greenhouse Gas (GHG) Emissions

MSCI ESG Research collects reported emissions and uses proprietary estimation methodologies that follows the GHG Protocol in including carbon dioxide (CO_2) and the five other principal GHGs: hydrofluorocarbons (HFCs), methane (CH_4), nitrous oxide (N_2O), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Emissions of these other gases are accounted for in terms of the quantity of CO_2 that has an equivalent global warming potential.

5.4.3. 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.

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

Appendix I: List of Developed Market Countries Eligible for Inclusion in the Index

Country of Domicile
Austria
Belgium
Denmark
Finland
France
Germany
Ireland
Italy
Luxembourg[25]
Netherlands
Norway
Portugal
Spain
Sweden
Switzerland
United Kingdom

[25] Luxembourg is considered a part of the developed markets universe for both fixed income and equity asset classes. In MSCI Equity Indexes, (e.g. MSCI World Index) Luxembourg is not included, because its equity market size fails to clear the minimum inclusion criteria as per MSCI Global Investable Market Indexes (GIMI) methodology.

Appendix II: ESG-based Exclusion Criteria

- **<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 public 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 public 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 public 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 public 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 public 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 public 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 the 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.

- **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.

- **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.

- **Nuclear Based Power Generation:**

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

- **Uranium Mining:**

  - All Companies deriving 5% or more revenue, or maximum estimated percent, from the mining of Uranium.

- **Conventional Weapons:**

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

- **<u>O&G - Extraction and Production:</u>**
  - All companies deriving 5% or more revenue (either reported or estimated) from the extraction and production of oil and gas.
- **<u>Civilian Firearms:</u>**
  - 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.
- **<u>Oil and Gas Related Actives</u>:**
  - All companies deriving 10% or more revenue (either reported or estimated) from oil and gas related activities, including distribution, retail, equipment and services, extraction and production, petrochemicals, pipelines and transportation, refining, gas processing and gas retail sales but excluding biofuel production and sales and oil and gas trading activities.
- **<u>Fossil Fuel based Power Generation</u>:**
  - All companies deriving 50% or more revenue (either reported or estimated) from the fossil fuel (thermal coal, liquid fuel and natural gas) based power generation.
- **<u>Thermal Coal Distribution Involvement</u>:**
  - All Companies with evidence of thermal coal distribution involvement.
- **<u>Thermal Coal Based Power Generation:</u>**
  - All companies deriving 5% or more revenue (either reported or estimated) from thermal coal-based power generation.
- **<u>Thermal Coal:</u>**
  - 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.

- **<u>ESG Controversy Score (“Red Flags”):</u>**
    - 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.

- **<u>Environment Controversy Score (“Orange Flag” and “Red Flag”):</u>**
    - 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.

- **<u>ESG Rating:</u>**
    - Securities of companies having an MSCI ESG Rating of “CCC” or “B”.
    - Securities of companies having missing MSCI ESG Rating.

- **<u>Carbon Intensity (Carbon Emissions - Scope 1+2 / USD million sales):</u>**
    - All companies having a carbon intensity of 1500 or more (most recently reported or estimated) measured using the company's Scope 1 + Scope 2 greenhouse gas emissions normalized by sales in million USD.

- **<u>Energy Consumption Intensity (GWh / EUR million sales):</u>**
    - All companies having an energy consumption (GWh) per million EUR revenue of 300 or more.

- **<u>Human Rights Concerns Controversies:</u>**
    - All companies having more than one Severe or Very Severe controversy cases in the last three years related to human rights violations issues.

- **<u>Missing Scores:</u>**
    - Companies with missing LCT Score are ineligible for inclusion in the index.
    - Companies with missing ESG Score are ineligible for inclusion in the index.

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 assessment[26] 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	
Score = 0	ASSET STRANDING		Potential to experience "stranding" of physical / natural assets due to regulatory, market, or technological forces arising from low carbon transition.	Coal mining & coal based power generation; Oil sands exploration/production
	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.	Oil & gas exploration & production; Petrol/diesel based automobile manufacturers, thermal power plant turbine manufacturers etc.
		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.	Fossil fuel based power generation, cement, steel etc.
	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.	Consumer staples, healthcare, etc.
Score = 10	SOLUTIONS		Potential to benefit through the growth of low-carbon products and services.	Renewable electricity, electric vehicles, solar cell manufacturers etc.

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

[26] For more details on MSCI Climate Change Metrics: https://www.msci.com/legal/disclosures/climate-disclosures.

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 Target 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 Index

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[27]	W_1 (in mn tCO2e)
MSCI EUR Corporates IG Climate Change ESG Select Index	MSCI EUR Corporates IG Select Index	November 01, 2022	10.17

[27] 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 VIII: 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 IX: Changes to this Document

The following sections have been updated effective March 01, 2022:

- Section 2.1 has been updated to reflect the additional criteria to exclude private placement bonds.
- Section 3.1 has been updated to reflect the updated quarterly rebalancing calendar.
- Section 4.1 has been updated to reflect the updated quarterly rebalancing calendar.

The following sections have been updated effective May 01, 2022:

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

The following sections have been updated effective November 01, 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 2.1 has been updated to clarify the index construction methodology of the Parent Index.
- Section 2.2 has been updated to reflect the optimization constraints.
- Section 3.1 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 updated effective May 01, 2023:

- Introduction and Appendix II have been updated to reflect updated and additional ESG-based exclusion criteria.
- Section 6 has been updated to reflect the latest ESG research product description.

The following sections have been updated effective November 01, 2023:

- Introduction and Appendix II have been updated to reflect updated and additional ESG-based exclusion criteria.
- Section 6 has been updated to reflect the latest MSCI ESG Research product description.
- The template of the Methodology book has been updated to the latest methodology book template.

The following sections have been updated effective February 03, 2025:

- Introduction and Appendix II have been updated to reflect additional ESG-based exclusion criteria.
- Details on the Methodology Set for the Indexes was added in Appendix VIII.
- Section 3 was updated to reflect the rebalancing and maintenance of both the MSCI EUR Corporates IG Select Index and the MSCI EUR Corporates IG Climate Change ESG Select Index.
- Section 5 was updated to reflect the latest MSCI ESG Research product description.

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