

**MSCI EMU CLIMATE PARIS
ALIGNED ESG SELECT INDEX
AND MSCI EMU CLIMATE PARIS
ALIGNED ESG SELECT
DECREMENT (NET EUR)
INDEXES METHODOLOGY**

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1 Introduction

The MSCI EMU Climate Paris Aligned ESG Select Index (the “Index”) is a quarterly rebalanced index of 50 stocks 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 MSCI EMU Climate Paris Aligned ESG Select Index incorporates the TCFD recommendations and is designed to exceed the minimum standards of the EU Paris-Aligned Benchmark.

The MSCI EMU Climate Paris Aligned ESG Select Index is constructed by following an optimization-based approach¹ and aims to:

- Exceed the minimum technical requirements laid out in the EU Delegated Act²
- Align with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)³
- 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%
- Shift index weight from “fossil fuels-based” to “green” 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
- Achieve a modest tracking error compared to the MSCI EMU Index and low turnover.

¹ 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 [Regulation \(EU\) 2016/1011 as amended by Regulation \(EU\) 2019/2089](#)

³ <https://www.fsb-tcfd.org/publications/final-recommendations-report/>

The MSCI EMU Climate Paris Aligned ESG Select 5% Decrement (Net EUR) Index, MSCI EMU Climate Paris Aligned ESG Select 4% Decrement (Net EUR) Index, MSCI EMU Climate Paris Aligned ESG Select 3.5% Decrement (Net EUR) Index and MSCI EMU Climate Paris Aligned ESG Select 3% Decrement (Net EUR) Index aim to represent the net performance of the MSCI EMU Climate Paris Aligned ESG Select Index, while applying a constant markdown ('synthetic dividend') of 5%, 4%, 3.5% and 3% respectively, on an annual basis, expressed as a percentage of performance⁴.

⁴ 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).

2 Index Construction Methodology

The Index uses company ratings and research provided by MSCI ESG Research⁵ for the index construction.

The MSCI EMU Climate Paris Aligned ESG Select Index is constructed from the MSCI EMU (the “Parent Index”).

The following steps are applied to construct MSCI EMU Climate Paris Aligned ESG Select Index.

- Eligible Universe Screening
- Optimization constraints
- Determining the optimized portfolio

In addition to the above steps, the following steps are applied to the MSCI EMU Climate Paris Aligned ESG Select Index to construct the “MSCI EMU Climate Paris Aligned ESG Select 5% Decrement (Net EUR) Index”.

- Applying the MSCI Decrement Indexes methodology⁶

2.1 ELIGIBLE UNIVERSE

2.1.1 LIQUIDITY CRITERIA

Securities with 3-month ADTV (Average Daily Traded Value) greater than or equal to USD 20 Million are eligible for inclusion in the MSCI EMU Climate Paris Aligned ESG Select Index.

ADTV is calculated as:

$$ADTV_{3M} = \frac{ATV_{3M}^7}{252}$$

Where ATV_{3M} is annualized 3-month Average Traded Value of the security.

To avoid multiple securities of the same company in the final index, only the most liquid security for each issuer per its 3-month ADTV is eligible for inclusion in the

⁵ See section 4 for further information regarding ESG and climate data used in the Indexes that MSCI Limited sources from MSCI ESG Research LLC, a separate subsidiary of MSCI Inc. MSCI ESG Research is solely responsible for the creation, determination and management of such data. MSCI Limited is the benchmark administrator for the MSCI indexes.

⁶ Please refer to the MSCI Decrement Indexes methodology at www.msci.com/index-methodology

⁷ MSCI Index Calculation Methodology at <https://www.msci.com/index-methodology>

MSCI Global Investable Market Indexes Methodology at <https://www.msci.com/index-methodology>

Index. For any issuer, should two securities have the same 3-month ADTV, the one with the higher free float-adjusted market capitalization is included.

2.1.2 ESG RATINGS ELIGIBILITY

The MSCI EMU Climate Paris Aligned ESG Select Index uses MSCI ESG Ratings to identify companies that have demonstrated an ability to manage their ESG risks and opportunities. Companies having MSCI ESG Rating of 'AAA', 'AA', 'A', 'BBB' and 'BB' are eligible for inclusion in the MSCI EMU Climate Paris Aligned ESG Select Index.

2.1.3 ESG CONTROVERSIES SCORE ELIGIBILITY

The MSCI EMU Climate Paris Aligned ESG Select Index uses MSCI ESG Controversies Scores to identify those companies that are involved in very serious controversies involving the environmental, social, or governance impact of their operations and/or products and services. Companies are required to have an MSCI ESG Controversies Score of 1 or higher to be eligible for inclusion in the MSCI EMU Climate Paris Aligned ESG Select Index.

2.1.4 ENVIRONMENTAL CONTROVERSIES SCORE ELIGIBILITY

The MSCI EMU Climate Paris Aligned ESG Select Index uses MSCI Environment Controversy Scores to identify those companies involved in Red or Orange Flag environmental controversies. 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) are not eligible for inclusion in the MSCI EMU Climate Paris Aligned ESG Select Index.

- 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.

2.1.5 CONTROVERSIAL BUSINESS INVOLVEMENT CRITERIA

The MSCI EMU Climate Paris Aligned ESG Select Index uses MSCI ESG Business Involvement Screening Research and MSCI Climate Change Metrics to identify

companies that are involved in the following business activities. Companies that meet the below values- and climate change-based criteria are excluded from the Eligible Universe. Please refer to Appendix IV for details on these criteria.

- Controversial Weapons
- Nuclear Weapons
- Thermal Coal
- Conventional Weapons
- Tobacco
- Gambling
- Adult Entertainment
- Oil & Gas

2.2 OPTIMIZATION CONSTRAINTS

At each Quarterly Index Review, the MSCI EMU Climate Paris Aligned ESG Select Index is constructed using an optimization process that aims to achieve replicability and investability as well as minimize ex-ante tracking error 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 Objectives	MSCI EMU Climate Paris Aligned ESG Select Index
1.	Minimum reduction in Greenhouse Gas (GHG) Intensity (Scope 1+2+3 ⁸) relative to Parent Index	50%
2.	Minimum average reduction (per annum) in GHG Intensity relative to GHG Intensity at the Base Date ⁹	10%

⁸ Prior to the May 2020 Semi-Annual Index Review (SAIR) of the Indexes, the Weighted Average Carbon Emissions Intensity has been calculated based on Scope 1+2 Emissions.

⁹ Prior to the May 2020 Semi-Annual Index Review (SAIR) of the Indexes, the average reduction in WACI has been calculated using Scope 1+2 Emissions since Inception.

3.	Minimum active weight in High Climate Impact Sector relative to Parent Index as defined in Appendix III	0%
4.	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%
5.	Minimum reduction in Weighted Average Potential Emissions Intensity relative to Parent Index	50%
6.	Aggregate Climate Value-At-Risk under 1.5 degree scenario ¹⁰ Please see more detail on Aggregate Climate Value-At-Risk in Appendix II and Appendix III.	$\geq \text{Max}(0, \text{Aggregate Climate VaR of Parent Index})$
7.	Minimum increase in weighted average Low Carbon Transition (LCT) Score relative to Parent Index Please see more detail on LCT Score in Appendix I	10%
8.	Minimum reduction in Weighted Average Extreme Weather Climate Value-At-Risk (Aggressive Scenario) relative to Parent Index	50% ¹¹

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

No.	Transition Opportunity Objectives	MSCI EMU Climate Paris Aligned ESG Select Index
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¹⁰ For more details on Climate value-At-Risk, please refer to Appendix II. Prior to the May 2020 Semi-Annual Index Review (SAIR) of the Indexes, the Policy Risk Climate VaR using Scope 1 Emissions since Inception.

¹¹ 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

9.	Minimum increase in weighted average LCT Score relative to Parent Index ¹²	10%
10.	Minimum ratio of Weighted Average Green Revenue/ Weighted Average Fossil fuels-based Revenue relative to Parent Index	4 times
11.	Minimum increase in Weighted Average Green Revenue relative to the Parent Index	100%

Table 3: Constraints imposed to meet diversification objectives

Diversification Objectives	MSCI EMU Climate Paris Aligned ESG Select Index
Constituent Maximum Weight	7.5%
Minimum constituent weight	0.01%
Maximum Sector Weight relative to Parent Index	+20%
Maximum Country Weight relative to Parent Index ¹³	+10%
Target Number of Stocks	50
Optimization Currency	EUR

During the Quarterly Index Review, in the event that there is no optimal solution that satisfies all the optimization constraints, the Target number of Stocks constraint and the Minimum constituent weight constraint will be relaxed.

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

¹² 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.

¹³ 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 +10% is not applicable.

2.3 DETERMINING THE OPTIMIZED PORTFOLIO

The Index is constructed using the Barra Open Optimizer¹⁴ in combination with the relevant Barra Equity Model. The weights of the securities are an outcome of the optimization process. The optimization uses universe of eligible securities and the specified optimization objectives and constraints to determine the constituents of the Index.

2.4 APPLYING THE MSCI DECREMENT INDEXES METHODOLOGY

The MSCI Decrement Indexes Methodology¹⁵ is applied on the MSCI EMU Climate Paris Aligned ESG Select Index to construct the MSCI EMU Climate Paris Aligned ESG Select 5% Decrement (Net EUR) Index. The parameters for the application of the decrement methodology in the above index is noted in Appendix V.

¹⁴ Please refer to Appendix VI and VII for more details.

¹⁵ Please refer to the MSCI Decrement Indexes methodology at www.msci.com/index-methodology

3 Maintaining the MSCI EMU Climate Paris Aligned ESG Select Index

3.1 QUARTERLY INDEX REVIEWS

The Index is rebalanced on a semi-annual basis, as of the close of the last business day of May and November, coinciding with the May and November Index Review of the MSCI Global Investable Market Indexes. The pro forma Indexes are in general announced nine business days before the effective date

In general, MSCI uses MSCI ESG Research data¹⁶ (including MSCI ESG Ratings, MSCI Climate Change Metrics, MSCI Climate Value-at-Risk, MSCI ESG Sustainable Impact Metrics, MSCI ESG Controversies and MSCI Business Involvement Screening Research) as of the end of the month preceding the Index Reviews for the rebalancing of the Indexes.

3.2 ONGOING EVENT RELATED CHANGES

The general treatment of corporate events in the Indexes aims to minimize turnover outside of Index Reviews. The methodology aims to appropriately represent an investor's participation in an event based on relevant deal terms and pre-event weighting of the index constituents that are involved. Further, changes in index market capitalization that occur as a result of corporate event implementation will be offset by a corresponding change in the Variable Weighting Factor (VWF) of the constituent.

Additionally, if the frequency of Index Reviews in the Parent Index is greater than the frequency of Index Reviews in the Index, the changes made to the Parent Index during intermediate Index Reviews will be neutralized in the Index.

The following section briefly describes the treatment of common corporate events within the Index.

No new securities will be added (except where noted below) to the Index between Index Reviews. Parent Index deletions will be reflected simultaneously.

EVENT TYPE

EVENT DETAILS

¹⁶ See section 4 for details of data sourced from MSCI ESG Research used in the Indexes.

New additions to the Parent Index

A new security added to the Parent Index (such as IPO and other early inclusions) will not be added to the index.

Spin-Offs

All securities created as a result of the spin-off of an existing Index constituent will be added to the Index at the time of event implementation. Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.

Merger/Acquisition

For Mergers and Acquisitions, the acquirer's post event weight will account for the proportionate amount of shares involved in deal consideration, while cash proceeds will be invested across the Index.

If an existing Index constituent is acquired by a non-Index constituent, the existing constituent will be deleted from the Index and the acquiring non-constituent will not be added to the Index.

Changes in Security Characteristics

A security will continue to be an Index constituent if there are changes in characteristics (country, sector, size segment, etc.) Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.

Further detail and illustration regarding specific treatment of corporate events relevant to this Index can be found in the MSCI Corporate Events Methodology book under the sections detailing the treatment of events in Capped Weighted and Non-Market Capitalization Weighted indexes.

The MSCI Corporate Events methodology book is available at:

<https://www.msci.com/index-methodology>

4 MSCI ESG Research

The Index is a product of MSCI Inc. that utilizes 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 Index uses the following MSCI ESG Research products: MSCI ESG Ratings, MSCI ESG Controversies, MSCI ESG Business Involvement Screening Research, MSCI Climate Change Metrics, MSCI Impact Solutions and MSCI Climate Value-At-Risk. MSCI Indexes are administered by MSCI Limited.

4.1 MSCI CLIMATE CHANGE METRICS

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

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

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

4.2 MSCI CLIMATE VALUE-AT-RISK

Climate Value-at-Risk (Climate VaR) is designed to provide a forward-looking and return-based valuation assessment to measure climate related risks and opportunities in an investment portfolio. The fully quantitative model offers deep insights into how climate change could affect company valuations.

For more details on MSCI Climate Value-At-Risk, please refer to <https://www.msci.com/climate-data-and-metrics>

4.3 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	<ol style="list-style-type: none"> 1. Alternative energy 2. Energy efficiency 3. Green building
	Natural capital	<ol style="list-style-type: none"> 4. Sustainable water 5. Pollution prevention 6. Sustainable agriculture
Social Impact	Basic needs	<ol style="list-style-type: none"> 7. Nutrition 8. Major Disease Treatment 9. Sanitation 10. Affordable Real Estate
	Empowerment	<ol style="list-style-type: none"> 11. SME Finance 12. Education 13. Connectivity – Digital divide

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

More detailed taxonomy for each category can be found in Section 2.4 of the MSCI ACWI Sustainable Impact Index Methodology available at <https://www.msci.com/index-methodology>

4.4 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>.

4.5 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

4.6 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>.

Appendix I: MSCI Low Carbon Transition Risk Assessment

MSCI ESG Research's Low Carbon Transition Risk assessment¹⁷ 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.

¹⁷ For more details on MSCI Climate Change Metrics: <https://www.msci.com/climate-change-solutions>

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 over the next 15 years and calculate what these costs might signify about financial performance into the foreseeable future.

1.5°C Aggregated Policy Risk Equity Climate VaR (AIM CGE) [%]

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

1.5°C Technology Opportunity Equity Climate VaR (AIM CGE) [%]

An equity's upside technology opportunity exposure, expressed as a percentage of the equity's market value, assuming a global 1.5°C target and calculated using carbon prices from the AIM CGE model. Please refer to the Climate VaR methodology document for further details on scenario options.

Aggregated Extreme Weather Equity Climate VaR (Aggressive Scenario) [%]

An equity's "worst-case" (95th percentile) downside or upside potential, expressed as a percentage of the equity's market value, assuming trends in extreme cold, extreme heat, extreme precipitation, heavy snowfall, extreme wind, coastal flooding, fluvial flooding and tropical cyclones continue along a Business-As-Usual pathway.

Appendix III: Calculation of Target Metrics

Calculation of GHG Intensity

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

Security Level GHG Intensity =

$$\frac{\text{Scope 1 + 2 + 3 Carbon Emissions} * (1 + EVIAF)}{\text{Enterprise Value} + \text{Cash(in M\$)}}$$

Enterprise Value Inflation Adjustment Factor (EVIAF) =

$$EVIAF = \left(\frac{\text{Average(Enterprise Value} + \text{Cash)}}{\text{Previous (Average(Enterprise Value} + \text{Cash))}} \right) - 1$$

Weighted Average GHG Intensity of Parent Index =

$$\sum (\text{Weight in Parent Index} * \text{Security Level GHG Intensity})$$

Weighted Average GHG Intensity of Derived Index =

$$\sum (\text{Index Weight} * \text{Security Level GHG Intensity})$$

Calculation of Potential Carbon Emissions Intensity

For newly added companies to the index where data is not available yet, MSCI uses zero fossil fuel reserves.

Security Level Potential Carbon Emissions (PCE) Intensity =

$$\frac{\text{Absolute Potential Emissions} * (1 + EVIAF)}{\text{Enterprise Value} + \text{Cash(in M\$)}}$$

Weighted Average Potential Emissions Intensity of Parent Index =

$$\sum (\text{Weight in Parent Index} * \text{Security Level PCE Intensity})$$

Weighted Average Potential Emissions Intensity of Derived Index =

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

Calculation of Average Decarbonization

On average, the Indexes follow a 10% decarbonization trajectory since the Base Date. The Weighted Average GHG Intensity at the Base Date (W_1) is used to compute the target Weighted Average GHG Intensity at any given Semi-Annual Index Review (W_t) as per the below formula.

$$W_t = W_1 * 0.90^{\frac{(t-1)}{2}}$$

Where 't' is the number of Semi-Annual Index Reviews since the Base Date.

Thus, for the 3rd Semi-Annual Index Review since the Base Date (t=3), the target Weighted Average GHG Intensity will be $W_1 * 0.90$.

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 GHG intensity by 7% over each of the last 3 years

Calculation of Green Revenue to Fossil fuels-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 fuels-based Revenue

For each constituent in the Parent Index, the Fossil fuels-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 fuels-based Revenue% is calculated as:

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

The Green Revenues to Fossil fuels-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 fuels-based Revenue as per the formula below:

$$= \frac{Weighted\ Average\ Green\ Revenue\%}{Weighted\ Average\ Brown\ Revenue\%}$$

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 VaR¹⁸ (1.5 Degrees):** Weighted average of security level 1.5°C Aggregated Policy Risk Equity Climate VaR (AIM CGE) [%]
2. **Technology Opportunities Climate VaR (1.5 Degrees):** Weighted average of security level 1.5°C Technology Opportunity Equity Climate VaR (AIM CGE) [%]
3. **Extreme Weather Climate VaR (Aggressive Scenario):** Weighted average of security level Aggregated Extreme Weather Equity Climate VaR (Aggressive Scenario) [%]

Climate Impact Sectors

NACE¹⁹ is the European Union's classification of economic activities. As per the draft DA, stocks in the NACE Section codes A, B, C, D, E, F, G, H, L are classified as "High Climate Impact" sector and other stocks are classified 'Low Climate Impact' sector.

¹⁸ Starting from the May 2020 Semi-Annual 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 Semi-Annual Index Review of the Indexes is as of September 30, 2020.

¹⁹ For further details regarding NACE, please refer to https://ec.europa.eu/eurostat/statistics-explained/index.php?title=NACE_background

The GICS²⁰ Sub-Industry code for each security is mapped to the corresponding “Climate Impact Sector” using a mapping. This mapping is constructed in the following steps:

1. MSCI has published a mapping²¹ between the NACE classes and GICS Sub-Industry.
2. For each GICS Sub-Industry, the number of NACE classes which fall under the High Climate Impact Sector (say the number of classes is N_H) and Low Climate Impact Sector (say the number of classes is N_L) is identified
3. If all the NACE classes for a given GICS Sub-Industry are identified in the High Climate Impact Sector ($N_L = 0$), then the GICS Sub-Industry is mapped to the High Climate Impact Sector. Conversely, if all the NACE classes for a given GICS Sub-Industry are identified in the Low Climate Impact Sector ($N_H = 0$) then the GICS Sub-Industry is mapped to the Low Climate Impact Sector
4. In case a GICS Sub-Industry is mapped to some NACE classes in the High Climate Impact Sector and the others in the Low Climate Impact Sector, the GICS Industry is mapped to the Climate Impact Sector in the following manner:
 - a. **$N_H \geq N_L$** : If the number of NACE classes in the High Climate Impact Sector is at least equivalent to the number of NACE classes in the Low Climate Impact Sector, the GICS Sub-Industry is mapped to the High Climate Impact Sector
 - b. **$N_H < N_L$** : If the number of NACE classes in the High Climate Impact Sector is less than the number of NACE classes in the Low Climate Impact Sector, the GICS Sub-Industry is mapped to the Low Climate Impact Sector
5. Using the GICS Sub-Industry to Climate Impact Sector mapping created in Step 4, and the security-level GICS Sub-Industry, each security in the Parent Index is classified in either High Climate Impact Sector or Low Climate Impact Sector

²⁰ For further information regarding GICS, please refer to <https://www.msci.com/gics>

²¹ This mapping is available in the [Handbook of Climate Transition Benchmarks, Paris-Aligned Benchmark and Benchmarks' ESG Disclosures](#)

Appendix IV: Values- and Climate Change-Based Exclusion Criteria

The MSCI EMU Climate Paris Aligned ESG Select Index is constructed with an aim to reflect the performance of companies that are consistent with specific values- and climate change-based criteria.

Values-based Exclusions Criteria

- **Controversial Weapons**
 - All companies with any tie to Controversial Weapons (cluster munitions, landmines, depleted uranium weapons, biological/chemical weapons, blinding lasers, non-detectable fragments and incendiary weapons), as defined by the methodology of the MSCI Ex-Controversial Weapons Indexes available at <https://www.msci.com/index/methodology/latest/XCW>
- **Nuclear Weapons**
 - All companies deriving 5% or more revenue from the production of 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).
 - All companies that manufacture or assemble delivery platforms that were not developed or not significantly modified for the exclusive delivery of nuclear weapons.
 - All companies that manufacture components for nuclear-exclusive delivery platforms.

- **Conventional Weapons**
 - All companies deriving 20% or more revenue from weapons-related support systems and services
 - All companies deriving 5% or more revenue from the production of conventional weapons
- **Civilian Firearms**
 - All companies deriving 5% or more revenue from the manufacture and retail of civilian firearms and ammunition.
- **Tobacco**
 - All companies classified as a “Producer”.
 - All companies deriving more than 5% aggregate revenue from the production, distribution, retail and supply of tobacco-related products.
 - All companies deriving 5% or more revenue from the manufacture of tobacco related products
- **Gambling**
 - All companies classified as gambling “Operations” or “Support” that earn more than 5% revenue from gambling-related products.
- **Adult Entertainment**
 - All companies deriving 5% or more aggregate revenue from the production, distribution and retail of adult entertainment materials

Climate Change-based Exclusions Criteria

- **Thermal Coal Mining**
 - All companies deriving 1% or more 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)
- **Thermal Coal-Based Power Generation**
 - All companies deriving 20% or more revenue (either reported or estimated) from the thermal coal-based power generation and 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

- **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.
- **Nuclear Power**
 - All companies deriving 5% or more aggregate revenue from nuclear power activities
- **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 generation²².

²² As per https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter7.pdf, thermal coal based power generation, liquid fuel based power generation and natural gas based power generation have median lifecycle emissions exceeding 100gCO₂/kWh.

Appendix V: Parameters used for MSCI EMU Climate Paris Aligned ESG Select 5% Decrement (Net EUR) Index

- The following parameters are used for the calculation of MSCI EMU Climate Paris Aligned ESG Select Index 5% Decrement (Net EUR) Index

	MSCI Decrement Indexes Methodology Parameters	Parameters
1	Currency of Calculation	EUR
2	Return Variant of the MSCI EMU Climate Paris Aligned ESG Select Index	Daily Net Total Return
3	Decrement Type	Fixed Percentage
4	Decrement Application	Geometric
5	Decrement Value	5%
6	Day-count Convention	Actual / 365
7	Index Floor	0
8	Decrement Frequency	Daily

- The following parameters are used for the calculation of MSCI EMU Climate Paris Aligned ESG Select 4% Decrement (Net EUR) Index:

	MSCI Decrement Indexes Methodology Parameters	Parameters
1	Currency of Calculation	EUR
2	Return Variant of the MSCI EMU Climate Paris Aligned ESG Select Index	Daily Net Total Return
3	Decrement Type	Fixed Percentage
4	Decrement Application	Geometric
5	Decrement Value	4%
6	Day-count Convention	Actual / 365
7	Index Floor	0
8	Decrement Frequency	Daily

- The following parameters are used for the calculation of MSCI EMU Climate Paris Aligned ESG Select 3.5% Decrement (Net EUR) Index:

	MSCI Decrement Indexes Methodology Parameters	Parameters
1	Currency of Calculation	EUR
2	Return Variant of the MSCI EMU Climate Paris Aligned ESG Select Index	Daily Net Total Return
3	Decrement Type	Fixed Percentage
4	Decrement Application	Geometric
5	Decrement Value	3.5%
6	Day-count Convention	Actual / 365
7	Index Floor	0
8	Decrement Frequency	Daily

- The following parameters are used for the calculation of MSCI EMU Climate Paris Aligned ESG Select 3% Decrement (Net EUR) Index:

	MSCI Decrement Indexes Methodology Parameters	Parameters
1	Currency of Calculation	EUR
2	Return Variant of the MSCI EMU Climate Paris Aligned ESG Select Index	Daily Net Total Return
3	Decrement Type	Fixed Percentage
4	Decrement Application	Geometric
5	Decrement Value	3%
6	Day-count Convention	Actual / 365
7	Index Floor	0
8	Decrement Frequency	Daily

Appendix VI: Barra Equity Model Used in The Optimization

The MSCI Climate Paris Aligned Indexes currently use an optimization setup using the MSCI Barra Global Equity Model for Long-Term Investors (GEMTLTL).

Appendix VII: New release of Barra® Equity Model or Barra® Optimizer

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

Appendix VIII: Implementation of new Base Date

The following steps are used to identify whether the MSCI EMU Climate Paris Aligned ESG Select Index will implement a new Base Date during any Semi-Annual Index Review:

Step 1. Calculate the median Scope 3 Emissions of all companies in MSCI ACWI within each GICS Industry Group

Step 2. Out of the 24 GICS Industry Groups, identify the top 18 GICS Industry Groups with the highest median Scope 3 Emissions.

Step 3. The percentage change in the median Scope 3 Emissions for each of the 18 GICS Industry Groups is calculated relative to their median Scope 3 Emissions as of the previous Semi-Annual Index Review.

Step 4. If either of the following conditions are met, then a new Base Date would be implemented for the MSCI EMU Climate Paris Aligned ESG Select Index based on the change in Scope 3 Emissions–

- a. Out of the 18 GICS Industry Groups, at least 2 Industry Groups see a 50% change in the median Scope 3 Emissions
- b. Out of the 18 GICS Industry Groups, at least 6 Industry Groups see a 20% change in the median Scope 3 Emissions

A new Base Date may also be implemented based on the change in median Scope 1+2 Emissions by applying Steps 1-4 above using Scope 1+2 Emissions instead of Scope 3 Emissions.

When a new Base Date is implemented, either due to the change in median Scope 1+2 Emissions or due to the change in median Scope 3 Emissions, the Index will not apply the “Minimum average reduction (per annum) in WACI relative to WACI in the Base Date” as per Table 1 in Section 3.2 as a minimum requirement for the index. After the rebalance of the Index, the Base Date and Weighted Average Carbon Intensity on the Base Date (W1) as per Appendix VIII will be updated. For all subsequent Semi-Annual Index Reviews, the decarbonization targets will be calculated with the updated Base Date.

Appendix IX: Changes to this Document

The following sections have been modified since January 2022:

Update to include the index construction and maintenance parameters for:

- MSCI EMU Climate Paris Aligned ESG Select 4% Decrement (Net EUR) Index, MSCI EMU Climate Paris Aligned ESG Select 3.5% Decrement (Net EUR) Index and MSCI EMU Climate Paris Aligned ESG Select 3% Decrement (Net EUR) Index.

The following sections have been modified since July 2023:

- Methodology book was updated to reflect the transition of the MSCI Global Investable Market Indexes (GIMI) to Quarterly Comprehensive Index Reviews.
- All references to “Semi-Annual Index Reviews” and “Quarterly Index Reviews” of the MSCI GIMI were replaced with “Index Reviews.”
- Section 2.1.4: Clarified the exclusion criteria for companies involved in ESG Controversies.
- Section 4: ESG Research
 - Moved that after section 3.
 - Updated the descriptions of MSCI ESG Research Products.

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AMERICAS

Americas	1 888 588 4567 *
Atlanta	+ 1 404 551 3212
Boston	+ 1 617 532 0920
Chicago	+ 1 312 675 0545
Monterrey	+ 52 81 1253 4020
New York	+ 1 212 804 3901
San Francisco	+ 1 415 836 8800
São Paulo	+ 55 11 3706 1360
Toronto	+ 1 416 628 1007

EUROPE, MIDDLE EAST & AFRICA

Cape Town	+ 27 21 673 0100
Frankfurt	+ 49 69 133 859 00
Geneva	+ 41 22 817 9777
London	+ 44 20 7618 2222
Milan	+ 39 02 5849 0415
Paris	0800 91 59 17 *

ASIA PACIFIC

China North	10800 852 1032 *
China South	10800 152 1032 *
Hong Kong	+ 852 2844 9333
Mumbai	+ 91 22 6784 9160
Seoul	00798 8521 3392 *
Singapore	800 852 3749 *
Sydney	+ 61 2 9033 9333
Taipei	008 0112 7513 *
Thailand	0018 0015 6207 7181 *
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