MSCI EMU CLIMATE PARIS ALIGNED ESG SELECT INDEX AND MSCI EMU CLIMATE PARIS ALIGNED ESG SELECT 5% DECREMENT (NET EUR) INDEX METHODOLOGY

November 2021

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1 Introduction

The MSCI EMU Climate Paris Aligned ESG Select Index is a semi-annual 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 approach[1] and aims to:

- Exceed the minimum technical requirements laid out in the EU Delegated Act[2]
- 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 aims to represent the net performance of the MSCI EMU Climate Paris Aligned ESG Select Index, while applying a constant markdown ('synthetic dividend') of 5% on an annual basis, expressed as a percentage of performance.

2 MSCI ESG Research

The MSCI EMU Climate Paris Aligned ESG Select Index uses company ratings and research provided by MSCI ESG Research LLC. In particular, this index uses the following MSCI ESG Research products: MSCI ESG Ratings, MSCI Climate Change Metrics, MSCI Climate Value-at-Risk, MSCI ESG Sustainable Impact Metrics, MSCI ESG Controversies and MSCI ESG Business Involvement Screening Research.

For details on MSCI ESG Research's full suite of ESG products, please refer to: https://www.msci.com/esg-investing

2.1 MSCI CLIMATE CHANGE METRICS

MSCI Climate Change Metrics provides climate data & tools to support investors integrating climate risk & opportunities into their investment strategy and processes. It supports investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, align 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-solutions.

2.2 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

2.3 MSCI ESG SUSTAINABLE IMPACT METRICS

MSCI ESG Research's Sustainable Impact Metrics is designed to identify companies that currently offer products or services that address at least one of the major social and environmental challenges as defined by the UN Sustainable Development Goals.

Designed as a positive screen, it is designed to highlight companies that are deriving sales from products or services that may have a positive impact on society and the environment.

For more details on the MSCI ESG Sustainable Impact Metrics, please refer to https://www.msci.com/esg-sustainable-impact-metrics

2.4 MSCI ESG CONTROVERSIES

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

For more details on MSCI ESG Controversies, please refer to https://www.msci.com/documents/10199/acbe7c8a-a4e4-49de-9cf8-5e957245b86b.

2.5 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

2.6 MSCI ESG RATINGS

MSCI ESG Ratings provides research, data, analysis and ratings of how well companies manage environmental, social and governance risks and opportunities. MSCI ESG Ratings provides an overall company ESG rating - a seven-point scale from ‘AAA’ to ‘CCC’. In addition, the product provides scores and percentiles indicating how well a company manages each key issue relative to industry peers, as well as underlying data and metrics used to compile the scores and ratings.

For more details on MSCI ESG Ratings, please refer to https://www.msci.com/esg-ratings.

3 Index Construction Methodology

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 methodology[4]

3.1 ELIGIBLE UNIVERSE

3.1.1 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:

$$ADTV_{3M} = \frac{ATV_{3M}{}^{5}}{252}$$

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 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.

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

[5] MSCI Index Calculation Methodology at https://www.msci.com/index-methodology

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

3.1.2 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.

3.1.3 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.

3.1.4 Environmental Controversies Score Eligibility

The MSCI EMU Climate Paris Aligned ESG Select Index uses MSCI Environment Controversy Scores to identify those companies facing very severe and severe controversies pertaining to Environmental issues. Companies are required to have an MSCI Environment Controversy Score of 2 or higher to be eligible for inclusion in the MSCI EMU Climate Paris Aligned ESG Select Index.

3.1.5 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

3.2 OPTIMIZATION CONSTRAINTS

At each semi-annual 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[6]) relative to Parent Index	50%
2.	Minimum average reduction (per annum) in GHG Intensity relative to GHG Intensity at the Base Date[7]	10%
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] 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.

[7] 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. The Base Date may be updated based on the rules identified in Appendix VIII.

6.	Aggregate Climate Value-At-Risk under 1.5 degree scenario[8] Please see more detail on Aggregate Climate Value-At-Risk in Appendix II and Appendix III.	>= Max(0, 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%[9]

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

No.	Transition Opportunity Objectives	MSCI EMU Climate Paris Aligned ESG Select Index
9.	Minimum increase in weighted average LCT Score relative to Parent Index[10]	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%

[8] 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.

[9] 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

[10] 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.

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[11]	+10%
Target Number of Stocks	50
Optimization Currency	EUR

During the Semi-Annual 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 Semi-Annual Index Review.

3.3 DETERMINING THE OPTIMIZED PORTFOLIO

The Index is constructed using the Barra Open Optimizer[12] 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.

3.4 APPLYING THE MSCI DECREMENT INDEXES METHODOLOGY

The MSCI Decrement Indexes Methodology[13] 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.

[11] 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.

[12] Please refer to Appendix VI and VII for more details.

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

4 Maintaining the MSCI EMU Climate Paris Aligned ESG Select Index

4.1 SEMI-ANNUAL INDEX REVIEWS

The MSCI EMU Climate Paris Aligned ESG Select 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 SemiAnnual 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 data (including 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.

4.2 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
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

Appendix I: MSCI Low Carbon Transition Risk Assessment

MSCI ESG Research's Low Carbon Transition Risk assessment[14] 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.

[14] 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 =

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

Enterprise Value Inflation Adjustment Factor (EVIAF) =

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

Weighted Average GHG Intensity of Parent Index =

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

Weighted Average GHG Intensity of Derived Index =

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

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 =

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

Weighted Average Potential Emissions Intensity of Parent Index =

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

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 VaR[15] (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

NACE[16] 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

[15] 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.

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

Climate Impact" sector and other stocks are classified 'Low Climate Impact' sector. The GICS[17] 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 mapping[18] 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. **$N_H >= N_L$**: 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

[17] For further information regarding GICS, please refer to https://www.msci.com/gics

[18] 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) according to MSCI Ex-Controversial Weapons Indexes are excluded.
- **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 generation[19].

[19] 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 100gCO_2/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

Appendix VI: Barra Equity Model Used in The Optimization

The MSCI EMU Climate Paris Aligned ESG Select Index currently uses an optimization setup using the MSCI Barra Global Equity Model for Long-Term Investors (GEMLTL).

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 a 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.

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