MSCI SRI EU PAB Overlay ESG Custom Indexes Methodology

May 2025

Contents

1. Introduction

The MSCI SRI EU PAB Overlay ESG Custom Indexes[1] (the 'Indexes') are designed to represent the performance of companies that are consistent with specific values or climate change-based criteria and meet the minimum requirements of the EU Paris-Aligned (PAB)[2] Benchmark.

The Indexes are derived from their corresponding market cap weighted Indexes with applied exclusions based on a variable list provided by JP Morgan Asset Management (the 'Parent Indexes'). This is followed by further exclusions for companies based on their involvement in controversial business activities and an optimization-based approach to apply the PAB requirements.

Exclusions are based on three categories:

- Companies flagged on a variable list provided by JP Morgan Asset Management.
- Companies flagged on their involvement in ESG controversies and their assigned ESG Ratings by MSCI ESG Research.
- Companies flagged for involvement in Controversial Business Activities.
- Companies that are assessed by Urgewald[3] as playing a significant role in the thermal coal value chain (directly and/or via subsidiaries)

The optimization-based approach aims to:

- Reduce the weighted average greenhouse gas intensity by 50% relative to the Reference[4] Index.
- Reduce the weighted average greenhouse gas (GHG) intensity by 7% on an annualized basis.
- Achieve an ESG Score that is at least aligned with the Reference Index.
- Achieve low turnover and minimize tracking error compared to the Parent Index.

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

[2] The corresponding minimum requirements are defined in Commission Delegated Regulation (EU) 2020/1818, available under https://eur-lex.europa.eu/eli/reg_del/2020/1818/oj. MSCI's approach to meeting these requirements is described in the MSCI EU CTB/PAB Index Framework, available under https://www.msci.com/index/methodology/latest/EUCTBPABIndexFramework. In case changes to the Index methodology are required to maintain compliance with the regulatory CTB/PAB labels, MSCI will issue an announcement prior to implementing the changes in the methodology. MSCI will not conduct a formal consultation for such an update.

[3] Urgewald is a non-profit environmental and human rights organization that created and maintains two databases, namely the Global Coal Exit List and the Global Oil & Gas Exit List. More details are found at: https://www.urgewald.org/en/english

[4] The Reference Index is the free float-adjusted market capitalization weighted Index which corresponds to the Parent Index. The optimization constraints in Table 3 of Section 2.4 are applied relative to the Reference Index.

2. Constructing the Indexes

The Indexes use company ratings and research provided by MSCI ESG Research[5] for the Index construction.

The table below shows the Indexes and their respective Parent and Reference Indexes:

Table 1: The list of Indexes with their respective Parent and Reference Indexes

Index Name	Parent Index	Reference Index
MSCI WORLD SRI EU PAB Overlay ESG Custom Index	MSCI World ex Select Securities Index	MSCI World Index
MSCI USA SRI EU PAB Overlay ESG Custom Index	MSCI USA ex Select Securities Index	MSCI USA Index
MSCI Europe SRI EU PAB Overlay ESG Custom Index	MSCI Europe ex Select Securities Index	MSCI Europe Index
MSCI Emerging Markets SRI EU PAB Overlay ESG Custom Index	MSCI Emerging Markets ex Select Securities Index	MSCI Emerging Markets Index

2.1 Eligible Universe

The Eligible Universe for the Indexes is constructed from the constituents of the Parent Indexes by excluding securities based on an exclusion list provided by JP Morgan Asset Management. This variable list is updated on a semi-annual basis.

There is one security that will be excluded consistently through the full history of the Indexes.

Table 2: The security that will be consistently excluded from the Indexes:

MSCI Security Code	MSCI Security
10600.01	JP Morgan Chase & Co

2.2 Reference Indexes

The Reference Indexes aim to represent the Investment Universe for the Parent Index. This Index is the free float-adjusted market capitalization weighted index ("Reference Index") corresponding to the Parent Index as per the MSCI Global Investible Markets Index (GIMI) methodology[6]. The constraints in Table 4 of Section 2.4 are applied relative to the Reference Index for this methodology.

[5] 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.

[6] For further details regarding the MSCI Global Investible Markets Index methodology, please refer to https://www.msci.com/index-methodology

2.3 Eligibility Criteria

The Indexes use company ratings and research provided by MSCI ESG Research[5] to determine eligibility for index inclusion.

2.2.1 ESG Ratings Eligibility

The Indexes use MSCI ESG Ratings to identify companies that have demonstrated an ability to manage their ESG risks and opportunities. Companies are required to have an MSCI ESG Rating Screen of "BB" or above to be eligible for inclusion in the Indexes.

2.2.2 ESG Controversies and Controversial Business Involvement Criteria

The Indexes use MSCI ESG Controversies Scores, MSCI Business Involvement Screening Research and MSCI Climate Change Metrics to identify companies that are involved in the following controversies or controversial business activities. Companies that meet the following criteria are excluded from the Indexes.

- **Controversial Weapons:** Companies involved in Controversial Weapons as defined by the methodology of the MSCI Ex-Controversial Weapons Indexes.
- **ESG Controversies**: All companies assessed as having involvement in ESG controversies that are classified as Red Flags (MSCI ESG Controversy Score of 0). A Red Flag indicates an ongoing, Very Severe ESG controversy implicating a company directly through its actions, products, or operations.
- **Environmental Harm:** All companies assessed as having involvement in environmental controversies that are classified as Red (MSCI Environmental Controversy Score of 0) or Orange Flags (score of 1).
  - A Red Flag indicates an ongoing, Very Severe ESG controversy implicating a company directly through its actions, products, or operations.
  - An Orange Flag indicates an ongoing Severe ESG controversy implicating a company directly, or a Very Severe ESG controversy that is either partially resolved or indirectly attributed to the company's actions, products, or operations.
- **Thermal Coal**
  - **Thermal Coal Power:** All companies deriving 5% or more revenue (either reported or estimated) from thermal coal-based power generation.
  - **Thermal Coal Distribution:** All companies with evidence of thermal coal distribution or transport involvement. This includes transport of thermal coal by road, rail, shipping or air, and physical trading of thermal coal. It does cover involvement in storage of thermal coal, or involvement in metallurgical coal-related activities.

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[5] See section 4 for further information regarding ESG and climate data used in the Indexes that MSCI Limited and MSCI Deutschland GmbH 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 as a provider to MSCI Limited and MSCI Deutschland GmbH. MSCI Limited and MSCI Deutschland GmbH are the benchmark administrator for the MSCI indexes

- **Oil Activities**[7]

  All companies that derive 10% or more aggregate revenue (either reported or estimated) from oil-related activities, including:

  - Extraction and production of oil and natural gas liquids
  - Refining of oil fuels
  - Oil and oil products pipelines or natural gas liquids pipelines
  - Transportation of oil and oil products
  - Distribution of oil and related products
  - Exploration as a service to the oil and natural gas industries
  - Drilling wells as a service to the exploration and production of oil and natural gas

- **Gas Activities**[8]

  All companies deriving 50% or more aggregate revenue (either reported or estimated) from gas-related activities, including:

  - Extraction and production of natural gas
  - Processing of natural gas fuels
  - Natural gas pipelines
  - Transportation of natural gas
  - Distribution of gas and related products
  - Exploration as a service to the oil and natural gas industries
  - Drilling wells as a service to the exploration and production of oil and natural gas

[7] The combined oil & gas screen is applied for companies where the disaggregated oil/gas revenue data underlying the separate oil and gas screens is not available or is not consistent.

The combined oil & gas screen excludes all companies deriving 10% or more aggregate revenue from oil and gas related activities, including distribution / retail, equipment and services, extraction and production, pipelines and transportation and refining but excluding biofuel production and sales and trading activities.

For further details on the screening criteria, please refer to Appendix II of the MSCI EU CTB/PAB Index Framework at: https://www.msci.com/index/methodology/latest/EUCTBPABIndexFramework.

[8] The combined oil & gas screen is applied for companies where the disaggregated oil/gas revenue data underlying the separate oil and gas screens is not available or is not consistent.

The combined oil & gas screen excludes all companies deriving 10% or more aggregate revenue from oil and gas related activities, including distribution / retail, equipment and services, extraction and production, pipelines and transportation and refining but excluding biofuel production and sales and trading activities.

For further details on the screening criteria, please refer to Appendix II of the MSCI EU CTB/PAB Index Framework at: https://www.msci.com/index/methodology/latest/EUCTBPABIndexFramework.

- **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[9].
- **Tobacco:**
  - All companies that are involved in the production of tobacco products. Tobacco products include nicotine-containing products, including traditional and alternative smoking products.
  - All companies that derive 5% or more reported revenue (or, where not disclosed, maximum estimated revenue) from the production, distribution or retail of tobacco products, as a licensor of brand names for tobacco products, or as a supplier for tobacco products as a percentage of total revenue in its most recently completed fiscal year
- **Adult Entertainment**: All companies deriving 5% or more reported revenue (or, where not disclosed, maximum estimated revenue) from the production, distribution or retail of adult entertainment products or services as a percentage of total revenue in its most recently completed fiscal year.
- **Alcohol**
  - All companies deriving 5% or more reported revenue (or, where not disclosed, maximum estimated revenue) from alcohol production as a percentage of total revenue in its most recently completed fiscal year.
  - All companies deriving 15% or more aggregate reported revenue (or, where not disclosed, maximum estimated revenue) from alcohol and related activities as a percentage of total revenue in its most recently completed fiscal year.
- **Gambling**: All companies deriving 10% or more reported revenue (or, where not disclosed, maximum estimated revenue) from gambling operations, including online or mobile gambling, and supporting activities in its most recently completed fiscal year.
- **Genetically Modified Organisms (GMO):** All companies deriving 5% or more reported revenue (or, where not disclosed, maximum estimated revenue) from activities like genetic engineering as a percentage of total revenue in its most recently completed fiscal year.
- **Nuclear Weapons**: All companies involved meeting specific Nuclear Weapons business involvement criteria described in Appendix V.
- **Civilian Firearms**
  - All companies classified as "Producer" of firearms and small arms ammunitions for civilian markets. It does not include companies that cater to the military, government, and law enforcement markets.

[9] 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.

- 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.

- **Conventional Weapons**: All companies deriving 5% or more revenue (or, where not disclosed, maximum estimated revenue) from conventional weapons, or components, support systems, and services for such products as a percentage of total revenue in its most recently completed fiscal year.
- **Aggregate Weapons**: All companies deriving 15% or more aggregate revenue from conventional, controversial and nuclear weapons based on the following categories:
  - Companies involved in the production of conventional weapons, components for such products or support systems and services for such products.
  - Companies involved in the production of biological or chemical weapons, components for such products.
  - Companies involved in the production of blinding laser, incendiary or non-detectable fragments weapons in its most recently completed fiscal year.
  - Companies involved production of nuclear weapons, exclusive and dual-use delivery platform capable to deliver such products, intended and dual-use components of such products, services provided for such products.
- **Nuclear Power**
  - All companies generating 5% or more of their total electricity from nuclear power as a percentage of the company's total power generation in the most recently completed fiscal year.
  - All companies that have 5% or more of its installed capacity attributed to nuclear power in the most recently completed fiscal year.
  - All companies deriving 15% or more reported revenue (or, where not disclosed, maximum estimated revenue) from nuclear power and related activities as a percentage of total revenue in its most recently completed fiscal year.
- **Fossil Fuel Reserves Ownership:** All companies with evidence of owning proven & probable coal reserves and/or proven oil and natural gas reserves used for energy purposes, as defined by the methodology of the MSCI Global Ex Fossil Fuels Indexes available at https://www.msci.com/index-methodology
- **Fossil Fuel Extraction:** All companies deriving any revenue (either reported or estimated) from thermal coal mining or unconventional oil and gas extraction.
  - *Thermal Coal Mining:* Revenue from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties. It does not cover revenue from metallurgical coal; coal mined for internal power generation (e.g. in the case of vertically integrated power producers); intra-company sales of mined thermal coal; and revenue from coal trading.
  - *Unconventional Oil & Gas Extraction:* Revenue from oil sands, oil shale (kerogen-rich deposits), shale gas, shale oil, coal seam gas, and coal bed methane. It does not cover

all types of conventional oil and gas production including Arctic onshore/offshore, deep water, shallow water and other onshore/offshore.

2.3 Security Selection and Weighting

Securities in the Eligible Universe are selected and weighted following an optimization-based approach described below in Section 2.3.

2.4 Optimization Constraints

At each Index Review, the Indexes are 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. Climate objectives – constraints detailed in Table 3.
2. Diversification objectives – constraints detailed in Table 4.

Table 3: Constraints imposed to meet ESG & climate objectives:

No.	Climate Objectives	Values
1.	Minimum reduction in Greenhouse Gas (GHG) Intensity relative to EVIC[13] (Scope 1+2+3[14]) relative to the Reference Index	50%
2.	Minimum average reduction (per annum) in GHG Intensity (relative to EVIC) relative to GHG Intensity of the index at the Base Date[15]	7%
3.	Minimum active weight in High Climate Impact[16] Global Industry Classification Standard (GICS®)[17] sector relative to the Parent Index	0%

[13] Enterprise Value including Cash

[14] Prior to the May 2020 Index Review, the Weighted Average Carbon Emissions Intensity relative to EVIC has been calculated based on Scope 1+2 Emissions.

[15] Prior to the May 2020 Index Review, the average reduction in Weighted Average Carbon Emissions Intensity relative to EVIC has been calculated using Scope 1+2 Emissions since Inception.

[16] For further details on how MSCI assigns companies to either the high or low climate impact sectors, please refer to the MSCI EU CTB/PAB Index Framework available on https://www.msci.com/index/methodology/latest/EUCTBPABIndexFramework.

[17] GICS is the Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P Dow Jones Indices

4.	Minimum ESG Score Improvement relative to the Reference Index	1%[18]

Table 4: Constraints imposed to meet diversification objectives:

No.	Diversification Objective	
5.	Constituent Active Weight relative to the Parent Index	+/- 2%
6.	Security Weight as a multiple of its weight in the Parent Index	20x
7.	Active Sector Weights (the Energy GICS[19] Sector is not constrained) relative to the Parent Index	+/-5%
8.	Active Country Weights relative to the Parent Index[20]	+/-5%
9.	One Way Turnover[21]	5%
10.	Maximum Issuer Weight	10%
10.	Common Factor Risk Aversion[22]	0.0075
11.	Specific Risk Aversion[23]	0.075

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 one-way index turnover constraint in steps of 1% up to 20%.
- Relax the active sector weight constraint in steps of 1% up/down to +/-20%.
- The one-way index turnover constraint and the active sector weight constraint are alternately relaxed until a feasible solution is achieved.

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

[18] The Minimum ESG Score Improvement will change from 20% to 1% for all Indexes. This change will be implemented in a two-step process for the MSCI World SRI EU PAB Overlay ESG Custom Index and the MSCI USA SRI EU PAB Overlay ESG Custom Index with a one-way turnover constraint of 15% (instead of 5%) for the November 2024 and the May 2025 Index Review.

[19] The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P Dow Jones Indices.

[20] In case there are countries in the parent index which weigh less than 2.5% in the parent index then for such countries the active country upper bound of +5% is not applicable. When a country weighs less than 2.5% in parent index then the upper bound of country weight in the Index is set at three times of the country's weight in Parent Index.

[21] A one-way turnover of 15% is applied for the MSCI World SRI EU PAB Overlay ESG Custom Index and the MSCI USA SRI EU PAB Overlay ESG Custom Index for the November 2024 and May 2025 Index Reviews.

[22] The Common Risk Aversion penalizes systematic risk during the optimization process.

[23] The Systematic Risk Aversion penalizes idiosyncratic (asset-specific) risk during the optimization process.

2.5 Determining the Optimized Index

The Index is constructed using the Barra Open Optimizer[24] in combination with the relevant Barra Equity Model. The optimization uses the universe of eligible securities and the specified optimization objectives and constraints to determine the constituents of and the weights of constituents in the Indexes.

2.6 Treatment of Unrated Companies

Companies not assessed by MSCI ESG Research on data for the following MSCI ESG Research products are not eligible for inclusion in the Indexes:

- MSCI ESG Ratings
- MSCI ESG Controversies
- MSCI Climate Change Metrics
- MSCI Business Involvement Screening Research

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

[24] Please refer to Appendix III and IV for more details.

3 Maintaining the Indexes

3.1 Index Reviews

The Indexes are reviewed 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 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[25] as of the end of the month preceding the Index Reviews for the rebalancing of the MSCI SRI EU PAB Overlay ESG Custom Indexes. For some securities, such data may not be published by MSCI ESG Research by the end of the month preceding the Index Review. For such securities, MSCI will use ESG data published after the end of month, when available, 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
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

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

	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.](https://www.msci.com/index-methodology)

4 MSCI ESG Research

The Indexes are products of MSCI Inc. that utilize information such as company ratings and research produced and provided by MSCI ESG Research LLC (MSCI ESG Research), a subsidiary of MSCI Inc. In particular, the Indexes use the following MSCI ESG Research products: MSCI 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.

4.1 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.

4.2 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

4.3 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/legal/disclosures/climate-disclosures

Appendix I: Calculation of Target Metrics

Greenhouse Gas (GHG) Emissions Intensity

MSCI ESG Research collects company-specific direct (Scope 1) and indirect (Scope 2) greenhouse gas emissions (GHG) data from company public documents and/or the Carbon Disclosure Project. If a company does not report GHG emissions, then MSCI ESG Research estimates Scope 1 and Scope 2 GHG emissions.

MSCI ESG Research estimates company-specific indirect (Scope 3) GHG emissions from the Scope 3 Carbon Emissions Estimation Model. The data is generally updated on an annual basis.

Calculation of GHG Intensity

Carbon emissions of a company are normalized for size by dividing annual carbon emissions by Enterprise Value including Cash (EVIC). The Carbon Emissions Intensity is calculated using the latest Scope 1+2 carbon emissions, Scope 3 carbon emissions and EVIC of a company.

Security Level GHG Intensity (Scope 1+2+3) =

*(Unadjusted Security Level GHG Intensity (Scope 1+2) + Unadjusted Security Level GHG Intensity (Scope 3)) * (1 + EVIAF)*

Unadjusted Security Level GHG Intensity (Scope 1+2) =

$$\frac{(Scope\ 1 + 2\ Carbon\ Emissions)}{EVIC\ (in\ M\$)}$$

If Scope 1+2 carbon emissions and/or EVIC are not available, the average Scope 1+2 intensity of all the constituents of the MSCI ACWI in the same GICS Industry Group in which the security belongs is used.

Unadjusted Security Level GHG Intensity (Scope 3) =

$$\frac{(Scope\ 3\ Carbon\ Emissions)}{EVIC\ (in\ M\$)}$$

If Scope 3 carbon emissions and/or EVIC are not available, the average Scope 3 intensity of all the constituents of the MSCI ACWI in the same GICS Industry Group in which the security belongs is used.

Enterprise Value Inflation Adjustment Factor (EVIAF) =

$$\left(\frac{Average(EVIC)}{Previous\ (Average(EVIC))}\right) - 1$$

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 Average Decarbonization

On average, the Indexes follow a 7% decarbonization trajectory since the Base Date. The Weighted Average GHG Intensity relative to EVIC at the Base Date (W_1) is used to compute the target Weighted Average GHG Intensity relative to EVIC at any given Semi-Annual Index Review (W_t) as per the below formula.

$$W_t = W_1 * \ 0.93^{\frac{(t-1)}{2}}$$

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 relative to EVIC will be W_1*0.93.

Appendix II: Decarbonization Trajectory of Indexes

The Weighted Average GHG Intensity on 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.

$$W_t = W_1 * \ 0.93^{\frac{(t-1)}{2}}$$

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

Index	Reference Index	Base Date	W_1 (tCO2/M$ Enterprise Value + Cash)
MSCI World SRI EU PAB Overlay ESG Custom Index	MSCI World Index	June 01, 2020	237.79
MSCI USA SRI EU PAB Overlay ESG Custom Index	MSCI USA Index	June 01, 2020	219.99
MSCI Europe SRI EU PAB Overlay ESG Custom Index	MSCI Europe Index	June 01, 2020	270.23
MSCI Emerging Markets SRI EU PAB Overlay ESG Custom Index	MSCI Emerging Markets Index	June 01, 2020	393.21

The calculation of the targeted decarbonization trajectory is specified in section 4 of the MSCI EU CTB/PAB Index Framework[26].

[26] For further details on the MSCI EU CTB/PAB Index Framework, please refer to: https://www.msci.com/index/methodology/latest/EUCTBPABIndexFramework

Appendix III: Barra Equity Model Used in The Optimization

The MSCI SRI EU PAB Overlay ESG Custom Indexes currently use an optimization setup using the MSCI Barra Global Equity Model for Long-Term Investors (GEMLTL).

Appendix IV: 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 V: Companies Involved in Nuclear Weapons Business

Companies whose activities meet the following criteria, as determined by MSCI ESG Research, are excluded from the Index:

- 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.

Appendix VI: 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/ReadMe
- MSCI Corporate Events Methodology – https://www.msci.com/index/methodology/latest/CE
- MSCI Fundamental Data Methodology – https://www.msci.com/index/methodology/latest/FundData
- MSCI Index Calculation Methodology – https://www.msci.com/index/methodology/latest/IndexCalc
- MSCI Index Glossary of Terms – https://www.msci.com/index/methodology/latest/IndexGlossary
- MSCI Index Policies – https://www.msci.com/index/methodology/latest/IndexPolicy
- MSCI Global Industry Classification Standard (GICS) Methodology – https://www.msci.com/index/methodology/latest/GICS
- MSCI Global Investable Market Indexes Methodology – https://www.msci.com/index/methodology/latest/GIMI
- MSCI Global ex Controversial Weapons Indexes Methodology – https://www.msci.com/index/methodology/latest/XCW
- MSCI Global Fossil Fuels Exclusion Indexes Methodology – https://www.msci.com/index/methodology/latest/XFF
- MSCI SRI Indexes Methodology – https://www.msci.com/index/methodology/latest/SRI
- MSCI EU CTB/PAB Overlay Indexes Methodology – https://www.msci.com/index/methodology/latest/MSCIEUCTBPABOverlay
- MSCI EU CTB/PAB Index Framework – https://www.msci.com/index/methodology/latest/EUCTBPABIndexFramework
- ESG Factors In Methodology*

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

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

Appendix VIII: Changes to this Document

The following sections have been modified as of July 2024

Section 2.2.3: Controversial Business Involvement Criteria

- The screening criteria for Oil & Gas was clarified in this document.

The following sections have been modified as of November 2024

Section 2.4. Optimization Constraints

- The Minimum ESG Score Improvement relative to the Reference Index for MSCI World SRI EU PAB Overlay ESG Custom Index and MSCI USA SRI EU PAB Overlay ESG Custom Index has been updated from 20% to 1%.

Section 2.6 Treatment of Unrated Companies

- Added the treatment of companies when business involvement screening research or climate change metrics research not available from MSCI ESG Research.

The following sections have been modified as of May 2025

Section 1: Introduction

- Updated footnote with reference to the MSCI EU CTB/PAB Index Framework.

Section 2.1: Eligible Universe

- Updated exclusion criteria in relation to Thermal Coal to add thermal coal distribution and Global Coal Exit List (GCEL) based on the data provided by Urgewald.

Section 2.4: Optimization Constraints

- Added references to the MSCI EU CTB/PAB Index Framework for the definition of climate impact sectors and calculation of decarbonization trajectory.
- Added a maximum issuer weight of 10% which will be applied during the optimization process.
- Added a new footnote to provide descriptions for Common Risk Aversion and Systematic Risk Aversion.

Appendix I: Calculation of Target Metrics

- Removed the details of the implementation of the climate impact sectors, which can be found in the MSCI EU CTB/PAB Index Framework.

Appendix II: Decarbonization Trajectory of Indexes

- Added a reference to the MSCI EU CTB/PAB Index Framework for the calculation of the decarbonization trajectory.

Appendix V: Companies Involved in Nuclear Weapons

- Added details of the exclusion criteria for nuclear weapons since the description for all other controversial business screens has been moved to Section 2.3.

Appendix VI: Global Coal Exit List

- Added details on the frequency, process and usage of the GCEL list to exclude companies from the Indexes.

Appendix VII: Methodology Set

- Added reference to MSCI EU CTB/PAB Index Framework.

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AMERICA

United States	+ 1 888 588 4567 *
Canada	+ 1 416 687 6270
Brazil	+ 55 11 4040 7830
Mexico	+ 52 81 1253 4020

EUROPE, MIDDLE EAST & AFRICA

South Africa	+ 27 21 673 0103
Germany	+ 49 69 133 859 00
Switzerland	+ 41 22 817 9777
United Kingdom	+ 44 20 7618 2222
Italy	+ 39 02 5849 0415
France	+ 33 17 6769 810

EUROPE, MIDDLE EAST & AFRICA

China	+ 86 21 61326611
Hong Kong	+ 852 2844 9333
India	+ 91 22 6784 9160
Malaysia	1800818185 *
South Korea	+ 82 70 4769 4231
Singapore	+ 65 67011177
Australia	+ 612 9033 9333
Taiwan	008 0112 7513 *
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Japan	+ 81 3 4579 0333

* toll-free

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