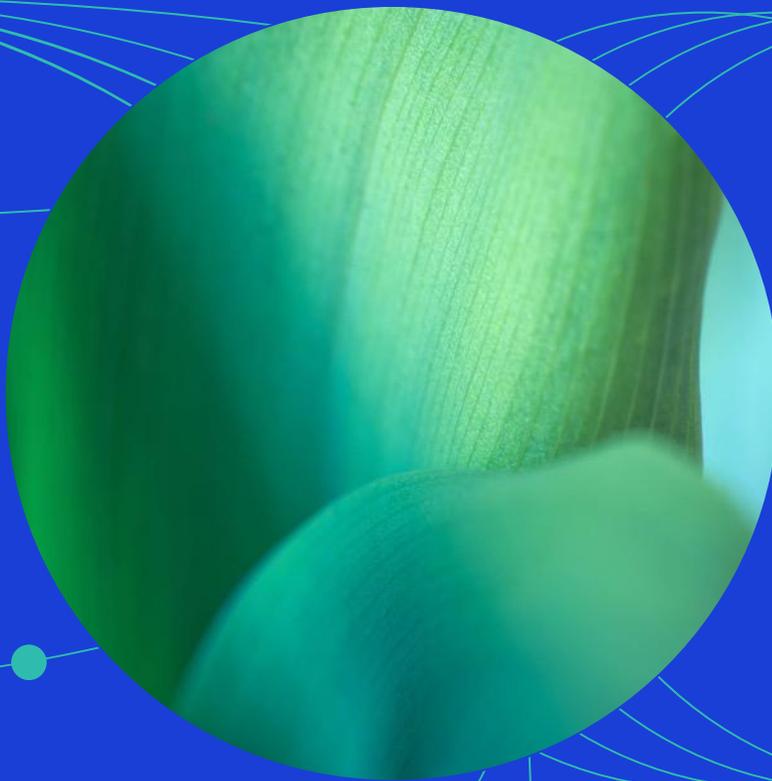




MSCI Climate Paris Aligned Ex Select Business Involvement Screens PAB Indexes Methodology



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1 Introduction

The MSCI Climate Paris Aligned Ex Select Business Involvement Screens PAB Indexes¹ (the 'Indexes' and each an 'Index') are designed to support investors seeking to reduce their exposure to transition risks and who wish to pursue opportunities arising from the transition to a lower-carbon economy while aligning with the requirements of the Paris Agreement. The Indexes are designed to exceed the minimum standards of the EU Paris-Aligned Benchmark² while applying certain values-based exclusion criteria.

The Indexes are constructed from their corresponding market capitalization weighted indexes ("the Parent Indexes" and each a 'Parent Index') following an optimization-based approach and aim to:

- Exceed the minimum technical requirements laid out in the EU Delegated Act.
- Achieve a maximum Implied Temperature Rise of 2.0°C for the Indexes.
- Achieve a self-decarbonization rate of 7%³ on a year-on-year basis.
- Shift index weight from companies facing climate transition risks to companies having climate transition opportunities, using the MSCI Low Carbon Transition Score, and by excluding certain fossil fuel-linked companies.
- Reduce the weight of companies assessed as high carbon emitters using scope 1, 2 and 3 emissions
- Achieve a modest tracking error compared to the relevant Parent Index and low turnover.

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 IX 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 Prior to April 1, 2026, the minimum required average annual reduction in GHG Intensity, relative to the GHG Intensity at the Base Date, was 10%. Effective April 1, 2026, this requirement was revised to 7%.

2 Constructing the Index

The Indexes and their respective Parent Indexes are in the table below:

Index	Parent Index
MSCI World Climate Paris Aligned Ex Select Business Involvement Screens PAB Index	MSCI World Index
MSCI USA Climate Paris Aligned Ex Select Business Involvement Screens PAB Index	MSCI USA Index
MSCI EMU Climate Paris Aligned Ex Select Business Involvement Screens PAB Index	MSCI EMU Index

The Indexes use company research provided by MSCI Solutions LLC (“MSCI Solutions”)⁴ to determine eligibility for index inclusion.

2.1 Eligible Universe

The Eligible Universe is constructed from the constituents of the Parent Index by excluding securities based on the exclusion criteria⁵ listed below:

ESG Ratings based exclusions

- **ESG Ratings:** Companies are required to have an MSCI ESG Rating of ‘BB’ or above to be eligible for inclusion in the Indexes.

PAB exclusions

- **Controversies:** All companies assessed as having involvement in controversies that are classified as Red Flags (MSCI Controversy Score of 0). A Red Flag indicates an ongoing, Very Severe 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 controversy implicating a company directly through its actions, products, or operations.

⁴ See Section 4 for further information regarding sustainability and climate data used in the Indexes that MSCI Limited and MSCI Deutschland GmbH source from MSCI Solutions LLC (“MSCI Solutions”), a separate subsidiary of MSCI Inc. MSCI Solutions 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.

⁵ Prior to the May 2023 Index Review, the MSCI World Climate Paris Aligned ex Select Business Involvement Screens PAB Index applied a different exclusion criteria. The MSCI USA, EMU Climate Paris Aligned ex Select Business Involvement Screens PAB Indexes apply the current exclusion criteria for the full history.

- An Orange Flag indicates an ongoing Severe controversy implicating a company directly, or a Very Severe controversy that is either partially resolved or indirectly attributed to the company's actions, products, or operations.
- **Controversial Weapons**: All companies involved in Controversial Weapons as defined by the methodology of the MSCI Ex-Controversial Weapons Indexes.
- **Thermal Coal Mining**: All companies that derive 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 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.
- **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 not include involvement in storage of thermal coal, or involvement in metallurgical coal-related activities.
- **Oil & Gas**
 - **Oil Activities**⁶: All companies deriving 10% or more aggregate revenue (either reported or estimated) from oil-related activities, including:
 - i. Extraction and production of oil and natural gas liquids
 - ii. Refining of oil fuels
 - iii. Oil and oil products pipelines or natural gas liquids pipelines
 - iv. Transportation of oil and oil products
 - v. Distribution of oil and related products
 - vi. Exploration as a service to the oil and natural gas industries
 - vii. Drilling wells as a service to the exploration and production of oil and natural gas
 - **Gas Activities**⁷: All companies deriving 50% or more aggregate revenue (either reported or estimated) from gas-related activities, including:
 - i. Extraction and production of natural gas
 - ii. Processing of natural gas fuels
 - iii. Natural gas pipelines

⁶ 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, please refer to Appendix II of the MSCI EU CTB/PAB Index Framework at: <https://www.msci.com/index/methodology/latest/EUCTBPABIndexFramework>.

⁷ As noted in footnote 6

- iv. Transportation of natural gas
 - v. Distribution of gas and related products
 - vi. Exploration as a service to the oil and natural gas industries
 - vii. Drilling wells as a service to the exploration and production of oil and natural gas
- **Power Generation:** All companies that derive 50% or more revenue from thermal coal based power generation, liquid fuel-based power generation and natural gas based power generation⁸.
 - **Tobacco:** All companies classified as “Producer” or derive 5% or more aggregate revenue from the production, retail, supply and licensing of tobacco-related products.

Business Involvement-based exclusions

- **Nuclear Weapons:** All companies involved meeting specific Nuclear Weapons business involvement criteria as described in Appendix IV.
- **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.
 - 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.
- **Adult Entertainment**
 - All companies deriving 5% or more revenue from the production of adult entertainment materials.
 - All companies deriving 15% or more aggregate revenue from the production, distribution and retail of adult entertainment materials.
- **Alcohol**
 - All companies deriving 5% or more revenue from the production of alcohol-related products.
 - All companies deriving 15% or more aggregate revenue from the production, distribution, retail and supply of alcohol-related products.
- **Conventional Weapons**
 - All companies that derive 5% or more revenue from the production of conventional weapons and components.
 - All companies that derive 15% or more revenue (or, where not disclosed, maximum estimated revenue) from the production of conventional weapons, components for such products or support systems and services for such products; production of biological or

⁸ 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.

chemical weapons, components for such products; 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; and the production of blinding laser, incendiary or non-detectable fragments weapons in their most recently completed fiscal year.

- **Gambling**
 - All companies that derive 5% or more revenue from ownership of operation of gambling-related business activities.
 - All companies that derive 15% or more aggregate revenue from gambling-related business activities.
- **Genetically Modified Organisms (GMO)**
 - All companies that derive 5% or more revenue from activities like genetically modifying plants, such as seeds and crops, and other organisms intended for agricultural use or human consumption.
- **Nuclear Utilities:** All companies that own or operate nuclear power plants.
- **Nuclear Power**
 - All companies that generate 5% or more of their total electricity from nuclear power in a given year.
 - All companies that have 5% or more of installed capacity attributed to nuclear sources in a given fiscal year.
 - All companies that derive 15% or more aggregate revenue from nuclear power activities.

Fossil Fuel based Exclusions

- **Fossil Fuel Reserves Ownership:** All companies with evidence of owning proven and probable coal reserves and/or proven oil and natural gas reserves used for energy purposes and/or thermal coal reserves.
- **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 (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.
 - **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.
- **Arctic Oil & Gas:** All companies that derive more than 0% revenue from Arctic Oil or Arctic Gas production.

- **Thermal Coal Power:** All companies that derive 5% or more revenue (either reported or estimated) from thermal coal-based power generation.
- **Active Fossil Fuel Sector:**
 - All companies that have exposure to fossil fuel related activities, including extraction, processing, storage and transportation of petroleum products, natural gas, thermal and metallurgical coal.

2.2 Optimization Constraints

At each Semi-Annual 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 Indexes subject to the following constraints:

1. Transition risks and opportunities – constraints detailed in Table 1
2. Diversification objectives – constraints detailed in Table 2

Table 1: Constraints imposed to meet transition risks and opportunities

No.	Transition Risks and Opportunities	Target Value
1.	Minimum reduction in Greenhouse Gas (GHG) Intensity (Scope 1+2+3 ⁹) relative to Parent Indexes	50%
2.	Minimum average reduction (per annum) in GHG Intensity relative to GHG Intensity ⁹ at the Base Date	7% ¹⁰
3.	Minimum active weight in High Climate Impact sector ¹¹ relative to Parent Indexes as defined in Appendix II	0%
4.	Minimum reduction in Weighted Average Potential Emissions Intensity relative to Parent Indexes	50%
5.	Minimum increase in weighted average LCT Score relative to Parent Indexes ¹² . Please see more detail on the LCT Score in Appendix III	10% ¹³

⁹ Prior to the May 2020 Semi-Annual Index Review (SAIR) of the Indexes, the Weighted Average Carbon Emissions Intensity was calculated based on Scope 1+2 Emissions.

¹⁰ Prior to April 1, 2026, the minimum required average annual reduction in GHG Intensity, relative to the GHG Intensity at the Base Date, was at 10%.

¹¹ 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>.

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).

¹³ The MSCI USA Climate Paris Aligned ex Select Business Involvement Screens PAB Index targets a 7.5% increase in weighted average Low Carbon Transition (LCT) Score relative to the Parent Index

No.	Transition Risks and Opportunities	Target Value
6.	Target Index Maximum Implied Temperature Rise (ITR) ¹⁴	<=2.0°C

Table 2: Constraints imposed to meet diversification objectives

No.	Diversification Objective	Target Value
7.	Constituent Active Weight	+/- 2%
8.	Minimum constituent weight	0.005%
9.	Security Weight as a multiple of its weight in the Parent Indexes	15x
10.	Active Sector Weights (the Energy Global Industry Classification Standard (GICS®) ¹⁵ Sector is not constrained)	+/- 5%
11.	Active Country Weights ¹⁶	+/- 5%
12.	One Way Turnover	5%
13.	Common Factor Risk Aversion ¹⁷	0.0075
14.	Specific Risk Aversion ¹⁸	0.075

The Weighted Average GHG Intensity on the base Date and the base dates for the respective indexes are described in Appendix I.

During the semi-annual 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 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 Semi-Annual Index Review.

¹⁴ For further details on the Implied Temperature Rise and Cumulative Projected Emissions calculations, please Refer to Appendix V for details on the ITR calculation.

¹⁵ GICS, the global industry classification standard jointly developed by MSCI Inc. and S&P Dow Jones Market Intelligence.

¹⁶ In case there are countries in the relevant 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 the relevant Parent Index then the upper bound of country weight in the Index is set at three times of the country's weight in the Parent Index.

¹⁷ The Common Risk Aversion penalizes systematic risk during the optimization process.

¹⁸ The Systematic Risk Aversion penalizes idiosyncratic (asset-specific) risk during the optimization process.

2.3 Determining the Optimized Index

The Indexes are constructed using the Barra Open Optimizer¹⁹ in combination with the relevant Barra Equity Model. The optimization uses universe of eligible securities and the specified optimization objectives and constraints to determine the constituents of the Indexes.

2.4 Treatment of Unrated Companies

Companies not assessed by MSCI Solutions on data for any of the following MSCI sustainability and climate products are not eligible for inclusion in the Indexes:

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

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

¹⁹ Please refer to Appendix VI and VII 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 Reviews 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 Solutions data (including MSCI Climate Change Metrics, MSCI Climate Value-at-Risk, MSCI Sustainable Impact Metrics, MSCI 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

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 if the spin-off security is also added to the Parent Index. 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.

The MSCI Corporate Events methodology book is available at:
<https://www.msci.com/index/methodology/latest/CE>.

4 MSCI Solutions

The Indexes are products of MSCI Inc. that utilize information such as company ratings and research produced and provided by MSCI Solutions LLC (“MSCI Solutions”), a subsidiary of MSCI Inc. In particular, the Indexes use the following MSCI sustainability and climate products: MSCI ESG Ratings, MSCI Controversies, MSCI Business Involvement Screening Research, MSCI Climate Change Metrics, and MSCI Impact Solutions. 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/sustainability-and-climate-resources-and-disclosures>.

4.2 MSCI Controversies

MSCI 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 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 Controversies Score falls on a 0-10 scale, with “0” being the most severe controversy.

The MSCI Controversies methodology can be found at: <https://www.msci.com/legal/sustainability-and-climate-resources-and-disclosures>

4.3 MSCI Business Involvement Screening Research

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

The MSCI Business Involvement Screening Research methodology can be found at: <https://www.msci.com/legal/sustainability-and-climate-resources-and-disclosures>.

4.4 MSCI Climate Change Metrics

MSCI Climate Change Metrics provides climate data and tools to support institutional investors seeking to integrate climate risk and opportunities into their investment strategy and processes. This includes investors seeking to achieve a range of objectives, including measuring and reporting on

climate risk exposure, implementing low carbon and fossil fuel-free strategies, alignment with temperature pathways and factoring climate change research into their risk management processes, in particular through climate scenario analysis for both transition and physical risks.

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

4.4.1 Fossil Fuels and Power Generation Metrics

MSCI Solutions identifies companies involved in fossil fuel-related assets and activities including fossil fuel reserves, resource extraction, power generation and generation capacity, revenue from such assets and activities and capital investments in such assets and activities. The metrics are based on disclosed activities, disclosed revenue and estimates of revenue that are extrapolated from company disclosures and eligible third-party sources (such as NGOs).

4.4.2 Greenhouse Gas (GHG) Emissions

MSCI Solutions collects reported emissions and uses proprietary estimation methodologies that follows the GHG Protocol in including carbon dioxide (CO₂) and the five other principal GHGs: hydrofluorocarbons (HFCs), methane (CH₄), nitrous oxide (N₂O), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Emissions of these other gases are accounted for in terms of the quantity of CO₂ that has an equivalent global warming potential.

4.4.3 Low-Carbon Transition (LCT) Risk Assessment

MSCI Solutions' LCT data assesses companies' exposure to risks and opportunities related to the low-carbon transition (the transition) based on the carbon-intensive nature of their business lines. In particular, in the event that the transition takes place, demand for carbon-intensive products would decline in favor of low- and zero-carbon products, which would put carbon-intensive companies and industries (for example, coal-based power generation and coal mining) at risk of having stranded assets over the long term (5+ years). MSCI Solutions considers a company exposed to low-carbon transition risks and opportunities through two main transmission channels: (1) exposure through involvement in carbon-intensive operations, and (2) exposure through involvement in or solutions for carbon-intensive products.

4.4.4 Implied Temperature Rise (ITR)

ITR is a forward-looking temperature alignment metric for companies and portfolios. Specifically, the ITR methodology evaluates if companies and portfolios are aligned with the Paris Agreement temperature goals — in particular, the maximal goal of limiting global mean surface temperature to an increase no more than 1.5°C in the year 2100 compared with preindustrial levels. A key consideration to ITR is the concept of a carbon budget, that is, how much the world can emit so that global warming doesn't exceed 1.5°C by 2100 and, by extension, how much a company can emit to take its fair share of global decarbonization. ITR extrapolates the global implied temperature rise at a 2100 horizon if the entire economy had the same budget overshoot or undershoot as a given company or portfolio.

4.5 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 Solutions has identified specific categories of products and services that it has determined companies can offer as potential solutions to environmental and social challenges.

For more details on MSCI Sustainable Impact Metrics, please refer to:

<https://www.msci.com/legal/sustainability-and-climate-resources-and-disclosures>

Appendix I: Decarbonization Trajectory of Indexes

The Weighted Average GHG Intensity on the Base Date (W_{t_b}) is used to compute the target Weighted Average GHG Intensity at any given semi-annual Index Review (W_t). Note that the target year-on-year decarbonization has been reduced as part of the methodology transition on April 1, 2026. At each Index Review, the target weighted average GHG Intensity is calculated by applying a 10% year-on-year reduction between the base date and the methodology transition date, and a 7% year-on-year reduction thereafter.

$$W_t = W_{t_b} * 0.90^{\frac{(t_c - t_b)}{2}} * 0.93^{\frac{(t - t_c)}{2}}$$

Where

- t_b is the Base Date.
- t_c is the methodology transition date (June 1, 2026).
- $t_c - t_b$ is the number of semi-annual Index Reviews between the Base Date and t_c , excluding the Base Date.
- $t - t_c$ is the number of semi-annual Index Reviews that have elapsed since (but not including) t_c .

The table below shows the Weighted Average GHG Intensity on the Base Date (W_{t_b}) for each of the regions where the Indexes are constructed:

Index	Parent Index	Base Date	W_1 (tCO2/M\$ Enterprise Value + Cash)
MSCI World Climate Paris Aligned ex Select Business Involvement Screens PAB Index	MSCI World Index	June 01, 2020	201.59
MSCI EMU Climate Paris Aligned ex Select Business Involvement Screens PAB Index	MSCI EMU Index	June 01, 2020	282.79
MSCI USA Climate Paris Aligned ex Select Business Involvement Screens PAB Index	MSCI USA Index	June 01, 2020	186.34

The calculation of the targeted decarbonization trajectory is specified in section 4 of the MSCI EU CTB/PAB Index Framework²⁰.

²⁰ For further details on the MSCI EU CTB/PAB Index Framework, please refer to: <https://www.msci.com/index/methodology/latest/EUCTBPABIndexFramework>

Appendix II: Calculation of Target Metrics

Greenhouse Gas (GHG) Emissions Intensity

MSCI Solutions 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 Solutions estimates Scope 1 and Scope 2 GHG emissions.

MSCI Solutions 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) =

$$\frac{(Unadjusted\ Security\ Level\ GHG\ Intensity\ (Scope\ 1+2) + Unadjusted\ Security\ Level\ GHG\ Intensity\ (Scope\ 3))}{(1 + EVIAF)}$$

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 Potential Carbon Emissions Intensity

Security Level Potential Carbon Emissions (PCE) Intensity =

$$\frac{Absolute\ Potential\ Emissions}{EVIC\ (in\ M\$)}$$

If Absolute Potential Emissions data is not available, MSCI uses zero fossil fuel reserves.

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 =

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

Appendix III: MSCI Low Carbon Transition Risk Assessment

MSCI Solutions’ Low Carbon Transition Risk assessment²¹ is designed to identify potential leaders and laggards by measuring companies’ exposure to and management of risks and opportunities related to the low carbon transition. The assessment is derived from company disclosures and estimates.

The final output of this assessment is 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 primary and secondary risks a company faces. It is an industry agnostic assessment of a company’s position vis-à-vis the transition.

LOW CARBON TRANSITION SCORE	LOW CARBON TRANSITION CATEGORY		LOW CARBON TRANSITION RISK / OPPORTUNITY	INDUSTRY EXAMPLES
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; industries in the Oil & Gas value chain
	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.	Petrol/diesel-based automobile manufacturers
		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.	Cement, Steel
	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
SCORE = 10	SOLUTIONS		Potential to benefit through the growth of low-carbon products and services.	Renewable electricity, Electric vehicles, Solar cell manufacturers

Exhibit 1: Low Carbon Transition Categories and Scores

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 Solutions is explained below.

²¹ For more details on MSCI Climate Change Metrics: <https://www.msci.com/climate-change-solutions>

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 estimated total net carbon intensity – which considers operational and product carbon emissions. In the next step, we compute Low Carbon Transition Risk Exposure Category and Score based on total net carbon intensity.

Step 2: Assess Low Carbon Transition Risk Management

In the second step, MSCI Solutions assesses 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 is 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 IV: Companies Involved in Nuclear Weapons Business

Companies, whose activities meet the following criteria, as determined by MSCI Solutions, 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 V: Calculation of Implied Temperature Rise

Implied Temperature Rise (ITR)

The index-level ITR is calculated through an aggregated budget approach. The sum of emissions overshoot is compared against the sum of emissions budget for the portfolio and converted to a degree of temperature rise using the TCRE approach²².

$$\text{Index-level ITR} = \text{Base Temperature} + \frac{\sum(\text{Global Budget} * \text{TCRE Factor} * \text{Security Weight in Index} * \frac{\text{Emissions Overshoot}}{\text{EVIC}})}{\sum(\text{Security Weight in Index} * \frac{\text{Emissions Budget}}{\text{EVIC}})}$$

where

- Base Temperature = 1.5 degrees, as per the MSCI ITR Model
- Global Budget = remaining total carbon budget available to limit global warming to 1.5 degrees
- Emissions Overshoot [Budget] = company-level cumulative emissions overshoot [budget] projected until 2050, as per the MSCI ITR Model

Missing Data Treatment: Companies with missing data for emissions budget and emissions overshoot are not considered for the Index Implied Temperature Rise calculation.

²² The Transient Climate Response to Cumulative Carbon Emissions (TCRE), established by the IPCC, provides a relationship that links each additional unit of emissions emitted beyond the available remaining global carbon budget to degrees of additional warming.

Appendix VI: Barra Equity Model Used in The Optimization

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

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: Methodology Transition in April 2026

The Indexes were exceptionally rebalanced on April 1, 2026, ahead of the regularly scheduled May Index Review²³, to reflect the following updates to the index construction methodology:

- The annual GHG intensity decarbonization target was updated from 10% to 7%.
- The constraints on Climate Value-at-Risk, Physical Value-at-Risk, Green to Fossil Fuel Revenues, Increase in Green Revenues, Aggregate Cumulative Projected Emissions, and Companies Setting Targets, were removed.
- The constraints on Minimum Constituent Weight and Security Weight as Multiple of Parent Index Weight were updated.

At the time of the transition, the one-way turnover constraint described in Section 2.2 was not applied.

Note that the update in the minimum annual reduction in GHG Intensity is applied on a going-forward basis from the point of the methodology transition. Details on the calculation of the decarbonization trajectory, including the transition treatment, are described in Appendix I.

²³ The indexes will be subsequently rebalanced at the November 2026 Index Review.

Appendix IX: 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 – www.msci.com/index/methodology/latest/ReadMe
- MSCI Corporate Events Methodology – www.msci.com/index/methodology/latest/CE
- MSCI Fundamental Data Methodology – <https://www.msci.com/index/methodology/latest/FundData>
- MSCI Index Calculation Methodology – www.msci.com/index/methodology/latest/IndexCalc
- MSCI Index Glossary of Terms – www.msci.com/index/methodology/latest/IndexGlossary
- MSCI Index Policies – www.msci.com/index/methodology/latest/IndexPolicy
- MSCI Global Industry Classification Standard (GICS) Methodology – <https://www.msci.com/index/methodology/latest/GICS>
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- MSCI Global ex Tobacco Involvement Index – <https://www.msci.com/index/methodology/latest/ExTobacco>
- MSCI SRI Indexes Methodology – <https://www.msci.com/index/methodology/latest/SRI>
- 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 X: Changes to this Document

The following sections have been updated as of May 2023:

- The methodology book was updated with a description of the Index and footnotes on the Methodology Set in Section 1.
- The target for Aggregate Climate Value -At-Risk updated to reflect the methodology enhancement in Table 1.
- The definition of Companies Setting Targets was updated to reflect the methodology enhancement in Table 1.
- The green revenue constraint was updated in Table 2.
- Eligibility criteria based on ESG Rating or ESG Controversial Business Involvements screening criteria was added.
- The constraint for Sustainable Investment was added to Section 2.
- The ESG Research Product descriptions were moved from section 2 to section 4.
- The Weighted Average GHG Intensity on the Base Date was added for the Index to Appendix I.
- The company level and index sustainable investment criteria was added to Appendix II.

The following sections have been updated as of November 2023:

- The treatment of companies with ratings and research not available from MSCI ESG Research was added to Section 2.4.
- The Companies Setting Target description was updated in Table 1 and
- The description of Climate Value-at-Risk models and scenarios were added in Appendix III.
- The calculation of optimization parameters were added in Appendix IV.

The following sections have been updated as of June 2024:

- The USA and EMU regions were added in Section 2.
- All the screens are described in Section 2.1.
- Updated Section 2.4 to include MSCI ESG Ratings.
- Updated the links in Section 4 and added a description for MSCI ESG Ratings.
- Added details of the Low Carbon Transition Risk Assessment in Appendix V.
- Added Appendix VI.

The following sections have been updated as of November 2024

- Section 2.2: Added Implied Temperature Rise constraints.
- Section 2.2: Added the special treatment applied for the MSCI USA Climate Paris Aligned Ex Select Business Involvement Screens Index at the November 2024 Index Review.

- Section 2.2: Updated the Minimum increase in Weighted Average Green Revenue relative to the Parent Indexes to 200% for the MSCI World Climate Paris Aligned Ex Select Business Involvement Screens Index.
- Appendix VII: Added details on the calculation of Implied Temperature Rise and Cumulative Projected Emissions.
- Appendix VIII and IX: Added new sections in the Appendix to provide details on the Barra Equity Model.

The following sections have been updated as of May 2025

Section 1: Introduction

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

Section 2.1: Eligible Universe

- Added reference to the MSCI EU CTB/PAB Index Framework.
- Added the thermal coal distribution screen.

Section 2.2: Optimization Constraints, Appendix IV: Calculation of Target Metrics

- Added references to the MSCI EU CTB/PAB Index Framework for the definition of climate impact sectors and calculation of decarbonization trajectory.

Section 3.2: Ongoing Event Related Changes

- Decoupled the treatment of common corporate events from the MSCI Climate Paris Aligned Indexes Methodology Book

Section 4: MSCI ESG Research

- Added a sub-section under Climate Change Metrics to provide additional details on Fossil Fuels and Power Generation Metrics and Greenhouse Gas Emissions

Appendix I: Decarbonization Trajectory of Indexes

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

Appendix IV: Calculation of Target Metrics

- Removed definition of climate impact sectors.

Appendix X: Methodology Set

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

The following section has been updated as of November 2025

Section 2.2: Optimization Constraints

- The Minimum ratio of Weighted Average Green Revenue/ Weighted Average Fossil fuels-based Revenue relative to Parent Indexes was reduced from 4 to 2.5 times in Table 2.

The following section has been modified as of December 2025

- The methodology and Index names were updated. As of December 3, 2025, the MSCI Climate Paris Aligned ex Select Business Involvement Screens Indexes have been renamed to MSCI Climate Paris Aligned ex Select Business Involvement Screens PAB Indexes

The following sections have been modified as of March 2026

Section 1: Introduction

- Updated the introduction to reflect the changes to the Climate objectives

Section 2.1: Eligible Universe

- The combined oil & gas screen was replaced by a disaggregated oil/gas screen.

Section 2.2: Optimization Constraints

- The year-on-year decarbonization target was updated to 7%
- The constraints on Climate Value-at-Risk, Physical Value-at-Risk, Green to Fossil Fuel Revenues, Increase in Green Revenues, Aggregate Cumulative Projected Emissions, and Companies Setting Targets were removed
- The constraints on Minimum Constituent Weight and Security Weight as Multiple of Parent Index Weight were updated
- Table 2 "Transition Opportunity Objectives" has been incorporated into Table 1 "Transition Risks and Opportunities" and old Table 3 "Constraints imposed to meet diversification objectives" is now Table 2.

Section 2.4: Treatment of Unrated Companies

- Disclosed the treatment of companies when business involvement screening research and Climate Change Metrics are not available from MSCI Solutions.

Section 4.4: MSCI Climate Change Metrics

- Section 4.4.5 Climate Value-at-Risk (VaR) was removed

Appendix I: Decarbonization Trajectory of the Indexes

- The year-on-year decarbonization target was updated to differentiate between the 10% and 7% target.

Old Appendix II: Company-Level and Index Level Sustainable Investments (%) were removed

Old Appendix III: MSCI Climate Value at Risk were removed

New Appendix II: Calculation of Target Metrics

- Calculation of Green Revenue to Fossil fuels-based Revenue Multiple, Aggregated Climate Value-at-Risk (VaR), and Companies Setting Targets sections were removed

New Appendix V: Calculation of Implied Temperature Rise

- Old Appendix II has become Appendix V and has been renamed from "Calculation of Implied Temperature Rise and Cumulative Projected Emissions" to "Calculation of Implied Temperature Rise"

- The section “Cumulative Projected Emissions” has been removed

New Appendix IX: Methodology Transition in April 2026

- Added a new section to describe the implementation of an off-cycle rebalance

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