

MSCI ESG Climate Transition (EU CTB) Select Indexes Methodology

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Contents

1	Introduction	3
2	MSCI ESG Research	3
2.1	MSCI Climate Change Metrics.....	4
2.2	MSCI Climate Value-At-Risk.....	4
2.3	MSCI ESG Sustainable Impact Metrics.....	4
2.4	MSCI ESG Controversies.....	4
2.5	MSCI ESG Business Involvement Screening Research	5
3	Index Construction Methodology	6
3.1	Applicable Universe	6
3.2	Eligible Universe.....	6
3.3	Optimization Constraints	6
3.4	Determining the Optimized Portfolio	9
4	Maintaining the MSCI ESG Climate Transition (EU CTB) Select Indexes.....	10
4.1	Semi-Annual Index Reviews.....	10
4.2	Ongoing Event Related Changes	10
	Appendix I: MSCI Climate Value-At-Risk.....	12
	Appendix II: Calculation of Target Metrics	13
	Appendix III: Decarbonization Trajectory of Indexes	18
	Appendix IV: Barra Equity Model Used in The Optimization.....	19
	Appendix V: New release of Barra® Equity Model or Barra® Optimizer	20
	Appendix VI: Notes on Historical Calculation of the Index.....	21

1 Introduction

The MSCI ESG Climate Transition (EU CTB) Select Indexes are designed to meet the minimum standards of the EU Climate Transition Benchmark (CTB) under the EU Benchmark Regulation (EU delegated acts)¹. The MSCI ESG Climate Transition (EU CTB) Select Indexes (the Index) are constructed from underlying MSCI indexes (herein, “Parent Indexes”) following an optimization-based approach² and aim to

- Reweight or exclude securities to exceed the minimum requirements of the EU Climate Transition Benchmark designation
- Increase exposure to ESG Leaders and companies with higher Board Independence Percent
- Align with a 1.5°C climate scenario using the MSCI Climate Value-at-Risk
- Reduce the Index’s exposure to physical risk arising from extreme weather events by at least 50%
- Reduce exposure to a broad range of climate-change related risks
- Increase the weight of companies with credible carbon reduction targets through the weighting scheme
- Achieve a modest tracking error compared to the Parent Index and low turnover

2 MSCI ESG Research

MSCI ESG Research provides in-depth research, ratings and analysis of the environmental, social and governance-related business practices of thousands of companies worldwide. It consists of an integrated suite of tools and products to efficiently manage research, analysis and compliance tasks across the spectrum of ESG factors.

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

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

² 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.

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 is designed to support investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, and factoring climate change research into their risk management processes. It provides Carbon Emissions, Fossil Fuel exposure, environmental impact (i.e., clean technology) data and screens, as well as climate-related risk exposure and management assessment on companies such as Low Carbon Transition scores and categories.

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

3 Index Construction Methodology

3.1 APPLICABLE UNIVERSE

The applicable universe includes all the existing constituents of underlying MSCI indexes (herein, “Parent Indexes”). This approach aims to provide an opportunity set with sufficient liquidity and investment capacity.

3.2 ELIGIBLE UNIVERSE

The Eligible Universe is constructed from the Applicable Universe by excluding securities of companies based on the exclusion criteria below:

1. **Controversial Weapons**: All companies involved in Controversial Weapons as defined by the methodology of the MSCI Ex-Controversial Weapons Indexes.
2. **ESG Controversies**: All companies having faced very severe controversies pertaining to ESG issues – Defined as companies with an ESG Controversy Score of 0.
3. **Conventional Weapons**: All companies deriving 10% or more revenue from the production of conventional weapons and components or deriving 10% or more aggregate revenue from weapons systems, components, and support systems and services.
4. **Exclusions as per MSCI ESG Screened Indexes**: All companies as per exclusions criteria in accordance with MSCI ESG Screened Indexes.
5. **ESG Score Based Exclusions**: All companies in bottom 25% by float adjusted market capitalization with worse ESG Score.
6. **Thermal Coal Based Power Generation**: All companies generating 10% or more power from thermal coal
7. **Thermal Coal Reserves**: All companies that own thermal coal reserves

3.3 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 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. ESG objectives – constraints detailed in Table 3
4. Diversification objectives – constraints detailed in Table 4

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 Objective	MSCI ESG Climate Transition (EU CTB) Select Indexes
1.	Minimum reduction in Greenhouse Gas (GHG) Intensity (Scope 1+2+3 ³) relative to Parent Index	30%
2.	Minimum average reduction (per annum) in GHG Intensity relative to GHG Intensity at the Base Date ⁴	7.35%
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	30%
6.	Aggregate Climate Value-At-Risk under 1.5 degree scenario ⁵	$\geq \text{Max}(0, \text{Aggregate})$

³ 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.

⁴ 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.

⁵ 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.

	Please see more detail on Aggregate Climate Value-At-Risk in Appendix II and Appendix III.	Climate VaR of Parent Index)
7.	Minimum reduction in Weighted Average Extreme Weather Climate Value-At-Risk (Aggressive Scenario) relative to Parent Index	50% ⁶

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

No.	Transition Opportunity Objective	MSCI ESG Climate Transition (EU CTB) Select Indexes
8.	Minimum ratio of Weighted Average Green Revenue/ Weighted Average Fossil fuels-based Revenue relative to Parent Index	4 times
9.	Minimum increase in Weighted Average Green Revenue relative to the Parent Index	100%

Table 3: Constraints imposed to meet ESG objectives

No.	ESG Objective	MSCI ESG Climate Transition (EU CTB) Select Indexes
10.	Minimum increase in weighted average ESG Score relative to Parent Index	1%
11.	Minimum increase in weighted average Board Independence Percent relative to Parent Index	1%

Table 4: Constraints imposed to meet diversification objectives

No.	Diversification Objective	MSCI ESG Climate Transition (EU
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⁶ 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

		CTB) Select Indexes
12.	Constituent Active Weight	+/- 2%
13.	Security Weight as a multiple of its weight in the Parent Index	20x
14.	Active Sector Weights (the Energy GICS Sector is not constrained)	+/-5%
15.	Active Country Weights ⁷	+/-5%
16.	One Way Turnover	5%
17.	Common Factor Risk Aversion	0.0075
18.	Specific Risk Aversion	0.075

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% upto 20%
- Relax the active sector weight constraint in steps of 1% upto +/-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.

3.4 DETERMINING THE OPTIMIZED PORTFOLIO

The Index is constructed using the Barra Open Optimizer⁸ 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.

⁷ 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.

⁸ Please refer to Appendix IV and V for more details.

4 Maintaining the MSCI ESG Climate Transition (EU CTB) Select Indexes

4.1 SEMI-ANNUAL INDEX REVIEWS

The Indexes are 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 Semi-Annual 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 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 II: Calculation of Target Metrics

Calculation of GHG Intensity

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

Security Level GHG Intensity =

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

Enterprise Value Inflation Adjustment Factor (EVIAF) =

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

Weighted Average GHG Intensity of Parent Index =

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

Weighted Average GHG Intensity of Derived Index =

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

Calculation of Potential Carbon Emissions Intensity

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

Security Level Potential Carbon Emissions (PCE) Intensity =

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

Weighted Average Potential Emissions Intensity of Parent Index =

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

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 7.35% 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.

$$W_t = W_1 * 0.9265^{\frac{(t-1)}{2}}$$

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 $W_1 * 0.9265$.

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 VaR⁹ (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

NACE¹⁰ 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

⁹ 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.

¹⁰ 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 GICS¹¹ 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 mapping¹² between the NACE classes and GICS Sub-Industry.
2. For each GICS Sub-Industry, the number of NACE classes which fall under the High Climate Impact Sector (say the number of classes is N_H) and Low Climate Impact Sector (say the number of classes is N_L) is identified
3. If all the NACE classes for a given GICS Sub-Industry are identified in the High Climate Impact Sector ($N_L = 0$), then the GICS Sub-Industry is mapped to the High Climate Impact Sector. Conversely, if all the NACE classes for a given GICS Sub-Industry are identified in the Low Climate Impact Sector ($N_H = 0$) then the GICS Sub-Industry is mapped to the Low Climate Impact Sector
4. In case a GICS Sub-Industry is mapped to some NACE classes in the High Climate Impact Sector and the others in the Low Climate Impact Sector, the GICS Industry is mapped to the Climate Impact Sector in the following manner:
 - a. **$N_H \geq N_L$** : If the number of NACE classes in the High Climate Impact Sector is at least equivalent to the number of NACE classes in the Low Climate Impact Sector, the GICS Sub-Industry is mapped to the High Climate Impact Sector
 - b. **$N_H < N_L$** : If the number of NACE classes in the High Climate Impact Sector is less than the number of NACE classes in the Low Climate Impact Sector, the GICS Sub-Industry is mapped to the Low Climate Impact Sector
5. Using the GICS Sub-Industry to Climate Impact Sector mapping created in Step 4, and the security-level GICS Sub-Industry, each security in the Parent Index is classified in either High Climate Impact Sector or Low Climate Impact Sector

¹¹ For further information regarding GICS, please refer to <https://www.msci.com/gics>

¹² This mapping is available in the [Handbook of Climate Transition Benchmarks, Paris-Aligned Benchmark and Benchmarks’ ESG Disclosures](#)

Appendix III: 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.

$$W_t = W_1 * 0.9265^{\frac{(t-1)}{2}}$$

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	Parent Index	Base Date	W_1 (tCO ₂ /M\$ Enterprise Value + Cash)
MSCI World ESG Climate Transition (EU CTB) Select Index	MSCI World Index	June 01, 2020	332.7
MSCI EM (Emerging Markets) ESG Climate Transition (EU CTB) Select Index	MSCI EM (Emerging Markets) Index	June 01, 2020	436.9
MSCI Europe ESG Climate Transition (EU CTB) Select Index	MSCI Europe Index	June 01, 2020	378.3
MSCI USA ESG Climate Transition (EU CTB) Select Index	MSCI USA Index	June 01, 2020	260.1

Appendix IV: Barra Equity Model Used in The Optimization

The MSCI ESG Climate Transition (EU CTB) Select Indexes currently use an optimization setup using the MSCI Barra Global Equity Model for Long-Term Investors (GEMTLT).

Appendix V: 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 VI: Notes on Historical Calculation of the Index

Companies Setting Targets Constraint from Table 1 on Page 7 is not applied on 2013 November rebalance for MSCI EM (Emerging Markets) ESG Climate Transition (EU CTB) Select Index due to unavailability of eligible companies with targets.

The following sections have been modified since March 01, 2022¹³-

- Section 3.2 – Updated to add exclusions based on thermal coal power and thermal coal reserves

¹³ This change in screening criteria was implemented in the index on February 16, 2022, effective on March 01, 2022, by excluding existing constituents which meet the updated exclusion criteria. The weights of the remaining securities were subsequently renormalized to 100%.

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The process for submitting a formal index complaint can be found on the index regulation page of MSCI's website at: <https://www.msci.com/index-regulation>.

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