MSCI World Climate Change Paris-Aligned Low Carbon Select Index Methodology

July 2023

Contents

1 Introduction

In the EU, two new categories of climate benchmarks (EU Climate Transition Benchmarks (CTBs) and EU Paris-Aligned Benchmarks (PABs)) were created pursuant to the EU Benchmark Regulation (Regulation (EU) 2016/1011 as amended by Regulation (EU) 2019/2089)[1] which sets out the minimum standards for such indexes.

The MSCI World Climate Change Paris-Aligned Low Carbon Select Index ("The Index") are considered EU Paris Aligned Benchmarks under the EU Benchmark Regulation and are constructed from their corresponding Parent Index, the MSCI World Index, taking into account the minimum requirements in the EU Benchmark Regulation. The Index aims to represent the performance of an investment strategy that reweights securities based upon the opportunities and risks associated with the climate transition risks and opportunities while satisfying the corresponding minimum requirements as per the EU Benchmark Regulation. Additionally, the Index also excludes securities of companies based on their revenues from thermal coal based power generation and securities classified in non-OECD countries[2] as per the MSCI Country of Classification framework and securities of companies based on certain ESG and Climate Change criteria. To avoid concentration, the Index is then capped as per the MSCI 10/40 Indexes methodology.[3]

[1] In case there are changes in the EU delegated acts (Regulation (EU) 2016/1011 as amended by Regulation (EU) 2019/2089) and an update to the Index methodology is required, MSCI will issue an announcement prior to implementing the changes in the methodology. MSCI will not conduct a formal consultation for such an update.

[2] as of June 07,2021, Hong Kong and Singapore are not members of the OECD. The list of countries which are members of OECD are available at http://www.oecd.org/about/members-and-partners/#d.en.533032

[3] The Indexes are governed by a set of methodology and policy documents ("Methodology Set"), including the present index methodology document. The Methodology Set for the Indexes can be accessed from MSCI's webpage https://www.msci.com/index-methodology in the section 'Search Methodology by Index Name or Index Code'.

The Methodology Set includes a document 'ESG Factors in Methodology' that contains the list of environmental, social, and governance factors considered, and how they are applied in the methodology (e.g., selection, weighting or exclusion).

2 Index Construction Methodology

The Indexes use company ratings and research provided by MSCI ESG Research[4] for the Index construction.

2.1 APPLICABLE UNIVERSE

The applicable universe includes all the existing constituents of the parent index, the MSCI World Index ("Parent Index"). This approach aims to provide an opportunity set with sufficient liquidity and capacity.

2.2 MINIMUM REQUIREMENTS

The requirements[5] MSCI imposes for the MSCI World Climate Change Paris-Aligned Low Carbon Select Index are detailed in Table 1.

Table 1: Requirements imposed for the MSCI World Climate Change Paris-Aligned Select Index

Minimum Requirements	MSCI World Climate Change Paris-Aligned Low Carbon Select Index
Minimum reduction in Weighted Average Scope 1+2+3 Carbon Emissions Intensity (WACI) relative to Parent Index	50%
Minimum reduction in Weighted Average Potential Emissions Intensity relative to Parent Index	50%
Baseline Exclusions	• Controversial Weapons • ESG Controversy Score[6] of 0 • Orange Flag Environmental Controversies

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

[5] as the requirements based on the minimum requirements for EU Paris Aligned Benchmarks as per the EU Delegated Acts

[6] 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. For more details on MSCI ESG Controversies, please refer to www.msci.com/documents/esg-controversies

	• Tobacco Manufacturers
Activity Exclusions	• Coal (1%+ revenues) • Oil & Gas (10%+ revenues) [7] • Coal, Oil & Gas based power generation (50%+ revenues) [8]
Minimum average reduction (per annum) in WACI relative to WACI at Inception	7%
Minimum ratio of Green Revenue/ Fossil Fuels based Revenue relative to Parent Index	At least a Factor of 4
Active weight in High Climate Impact Sector relative to Parent Index as defined in Section 2.5	0%
Corporate Target Setting	Aims to achieve higher allocation to companies that set targets, publish emissions and have reduced their Carbon Intensity by 7% over each of the last 3 years.[9]

2.3 INITIAL UNIVERSE

Securities in the Parent Index are selected and reweighted using the "Combined Score" as defined in Section 3.4 – Determination of Combined Score of the MSCI Climate Change Index methodology[10] and as per the formula below –

$$Security\ Weight = Combined\ Score * Weight\ in\ Parent\ Index$$

[7] While the minimum requirements for EU PAB Indexes recommend exclusion of companies which derive 10% or more of their revenues from Oil or 50% or more of their revenues from natural gas exploration or processing activities, The Indexes exclude all companies exclude all companies that derive 10% or more of their revenues from Oil and Gas.

[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 100gCO_2/kWh.

[9] Prior to the May 2021 Semi-Annual Index Review, this requirement has not been enforced and an increased allocation to companies which set evidence-based targets achieved by using the MSCI Climate Change Index Methodology

[10] For more details regarding the MSCI Climate Change Indexes, please refer to the MSCI Climate Change Indexes Methodology Book at https://www.msci.com/index-methodology.

The above weights are then normalized to 100%.

2.4 ELIGIBLE UNIVERSE

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

1. Companies involved in Controversial Weapons (i.e. cluster munitions, landmines, depleted uranium weapons, biological/chemical weapons, blinding lasers, non-detectable fragments and incendiary weapons), as defined by the methodology of the MSCI Ex-Controversial Weapons Indexes
2. 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.
3. All companies deriving more than 0% revenues from the manufacturing of tobacco products
4. All companies deriving more than 1% revenues from thermal coal based power generation
5. All companies assessed as having involvement in environmental controversies that are classified as Orange Flags (MSCI Environmental Controversy Score of 1).
    - 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.

Additionally, securities that meet any of the below criteria, corresponding to the Activity Exclusions for MSCI World Climate Change Paris-Aligned Low Carbon Select Index are excluded from the Initial Universe.

1. All companies deriving 1% or more revenue (either reported or estimated) from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties. It excludes: revenue from metallurgical coal; coal mined for internal power generation (e.g. in the case of vertically integrated power producers); intra-company sales of mined thermal coal; and revenue from coal trading (either reported or estimated)

2. All companies deriving 5% or more 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.
3. All companies deriving 50% or more revenue from thermal coal based power generation, liquid fuel based power generation and natural gas based power generation.
4. All companies generating 10% or more power from thermal coal
5. All companies that own thermal coal reserves

Additionally, the Eligible Universe also excludes securities based on the below criteria:

1 All companies classified in non-OECD countries[11] as per the MSCI Country of Classification framework

2 All companies with an MSCI Low Carbon Transition Category of Operational Transition, Product Transition and Asset Stranding

3 All companies meeting the exclusion criteria detailed in Appendix V.

2.5 INTERMEDIATE UNIVERSE

Each security in the Applicable Universe is classified into one of two climate impact sectors[12] based on its NACE section code. A stock can be assigned to either a 'High Climate Impact' or 'Low Climate Impact' sector. The Eligible Universe is broken into two smaller universes as described below:

[11] as of June 07,2021, Hong Kong and Singapore are not members of the OECD. The list of countries which are members of OECD are available at http://www.oecd.org/about/members-and-partners/#d.en.533032

[12] NACE is the European Union's classification of economic activities. Stocks in the NACE Section codes A, B, C, D, E, F, G, H, L are classified as "High Climate Impact" sector and other stocks are classified 'Low Climate Impact' sector. For further details regarding NACE, please refer to https://ec.europa.eu/eurostat/statistics-explained/index.php?title=NACE_background. The GICS Sub-Industry code for each security is mapped to the corresponding "Climate Impact Sector" using a mapping. For further information regarding GICS, please refer to https://www.msci.com/gics

2.5.1. HIGH CLIMATE IMPACT INTERMEDIATE UNIVERSE

High Climate Impact Intermediate Universe is constructed in following two steps –

- Select all securities in the High Climate Impact Sector from the Applicable Universe.
- Renormalize the weights of securities so that the aggregate weight of securities is equal to the weight of High Climate Impact Sector in the Parent Index.

2.5.1.1 INCREASED ALLOCATION TO COMPANIES SETTING TARGETS

Within the High Climate Impact Intermediate Universe, securities ("securities with targets") that meet each of the below criteria are identified:

- Securities of companies that have published emissions reduction targets
- Securities of companies that publish their emissions
- Securities of companies that have reduced their emissions intensity by 7% over each of the last 3 years

The Index aims to increase the aggregate weight to securities with targets in the following steps:

1. Calculate the aggregate weight in the Parent Index of all securities with targets in High Climate Impact Sector as W_p
2. Securities in the Applicable Universe are sorted in increasing order of their Scope 1+2+3 Carbon Emissions Intensity and securities in the top half of the sorted list are identified as "Top Half" securities.
3. Calculate the aggregate weight in the High Climate Impact Intermediate Universe of all "Top Half" securities with targets as W_o
4. If W_o is less than 1.2 times of W_p, then the weights of all "Top Half" securities with targets in the High Climate Impact Intermediate Universe are scaled up proportionately so that their aggregate weight in the High Climate Impact Intermediate Universe is equal to 1.2 times of W_p
5. The weight of the remaining securities in the High Climate Impact Sector will be reduced proportionately in order to retain the aggregate weight of the High Climate Impact Intermediate Universe.

2.5.2. LOW CLIMATE IMPACT INTERMEDIATE UNIVERSE

Low Climate Impact Intermediate Universe is constructed in following two steps –

- Select all securities in the Low Climate Impact Sector from the Applicable Universe.
- Renormalize the weights of securities so that the aggregate weight of securities is equal to the weight of Low Climate Impact Sector in the Parent Index.

2.5.2.1 INCREASED ALLOCATION TO COMPANIES SETTING TARGETS

Within the Low Climate Impact Intermediate Universe, securities ("securities with targets") that meet each of the below criteria are identified:

- Securities of companies that have published emissions reduction targets
- Securities of companies that publish their emissions
- Securities of companies that have reduced their emissions intensity by 7% over each of the last 3 years

The Index aims to increase the aggregate weight to securities with targets in the following steps:

1. Calculate the aggregate weight in the Parent Index of all securities with targets in Low Climate Impact Sector as W_p
2. Securities in the Applicable Universe are sorted in increasing order of their Scope 1+2+3 Carbon Emissions Intensity and securities in the top half of the sorted list are identified as "Top Half" securities.
3. Calculate the aggregate weight in the Low Climate Impact Intermediate Universe of all "Top Half" securities with targets as W_o
4. If W_o is less than 1.2 times of W_p, then the weights of all "Top Half" securities with targets in the Low Climate Impact Intermediate Universe are scaled up proportionately so that their aggregate weight in the Low Climate Impact Intermediate Universe is equal to 1.2 times of W_p
5. The weight of the remaining securities in the Low Climate Impact Sector will be reduced proportionately in order to retain the aggregate weight of the Low Climate Impact Intermediate Universe.

2.6 FINAL UNIVERSE

The Final Universe is constructed by combining the High Impact Intermediate Universe and the Low Impact Intermediate Universe. The High Impact Sector and Low Impact Sector weights are equal to their respective weight in the Parent Index.

The security weight within the High Impact and Low Impact sectors are in proportion of the security's LCT Category[13], LCT Score and Carbon Emissions Intensity. Compared to the Parent Index, the Final Universe typically has

- Lower Carbon Footprint
- Higher Green Revenue to Fossil Fuels based Revenue ratio
- Higher weight in companies which set emission targets
- Equal weight in High Impact and Low Impact Sector

2.6.1. CAPPING OF SECURITY WEIGHT IN FINAL UNIVERSE

The weight of securities in the Final Universe is capped at 4%, with the excess weight being distributed among the remaining securities in the same Climate Impact sector as the security being capped so that the overall weight in the High Impact Sector and Low Impact Sector is unchanged.

2.6.2. ITERATIVE DOWNWEIGHTING

The Final Universe is assessed against the minimum requirements detailed in Table 1. In case the Final Universe is found deficient on any of the minimum requirements, then the weights of the securities in the Final Universe are determined through an iterative process as described in Appendix IV.

2.6.3. APPLYING THE MSCI 10/40 INDEXES METHODOLOGY

The MSCI 10/40 Indexes methodology[14] is then applied on the remaining securities, such that the weight of any single group entity[15] is capped at 10%

[13] For details regarding the LCT Category and LCT Score, please refer to Appendix I: MSCI Low Carbon Transition Risk Assessment

[14] For details, refer to the MSCI 10/40 Indexes Methodology at www.msci.com/index-methodology

[15] For a definition and a description of the maintenance of Group Entities, please refer to the MSCI 10/40 Indexes methodology at www.msci.com/index-methodology.

and the sum of the weights of all group entities with a weight of more than 5% is capped at a maximum of 40%.

3 Maintaining the MSCI World Climate Change Paris-Aligned Low Carbon Select Index

3.1 SEMI-ANNUAL INDEX REVIEWS

The Index is rebalanced on a semi-annual basis, as of the close of the last business day of May and November, coinciding with the May and November Index 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 ESG Research data[16] (including MSCI ESG Controversies, MSCI ESG Business Involvement Screening Research, MSCI Climate Change Metrics and MSCI Impact Solutions) 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 Index 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.

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

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

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 Controversies, MSCI ESG Business Involvement Screening Research, MSCI Climate Change Metrics and MSCI Impact Solutions. MSCI Indexes are administered by MSCI Limited.

4.1 MSCI ESG CONTROVERSIES

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

The MSCI ESG Controversies methodology can be found at: https://www.msci.com/esg-and-climate-methodologies

4.2 MSCI ESG BUSINESS INVOLVEMENT SCREENING RESEARCH

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

For more details on MSCI ESG Business Involvement Screening Research, please refer to http://www.msci.com/resources/factsheets/MSCI_ESG_BISR.pdf

4.3 MSCI CLIMATE CHANGE METRICS

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

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

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

4.4 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	1. Alternative energy 2. Energy efficiency 3. Green building
	Natural capital	4. Sustainable water 5. Pollution prevention 6. Sustainable agriculture
Social Impact	Basic needs	7. Nutrition 8. Major Disease Treatment 9. Sanitation 10. Affordable Real Estate
	Empowerment	11. SME Finance 12. Education 13. Connectivity – Digital divide

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

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

Appendix I: MSCI Low Carbon Transition Risk Assessment

MSCI ESG Research's Low Carbon Transition Risk assessment[17] is designed to identify potential leaders and laggards by holistically measuring companies' exposure to and management of risks and opportunities related to the low carbon transition.

The final output of this assessment is two company-level factors as described below:

(1) **Low Carbon Transition Category**: This factor groups companies in five categories that highlight the predominant risks and opportunities they are most likely to face in the transition (Exhibit 1).

(2) **Low Carbon Transition Score:** This score is based on a multi-dimensional risks and opportunities assessment and considers both predominant and secondary risks a company faces. It is industry agnostic and represents an absolute assessment of a company's position vis-à-vis the transition.

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

LOW CARBON TRANSITION SCORE	LOW CARBON TRANSITION CATEGORY		LOW CARBON TRANSITION RISK / OPPORTUNITY	
Score = 0	ASSET STRANDING		Potential to experience "stranding" of physical / natural assets due to regulatory, market, or technological forces arising from low carbon transition.	Coal mining & coal based power generation; Oil sands exploration/production
	TRANSITION	PRODUCT	Reduced demand for carbon-intensive products and services. Leaders and laggards are defined by the ability to shift product portfolio to low-carbon products.	Oil & gas exploration & production; Petrol/diesel based automobile manufacturers, thermal power plant turbine manufacturers etc.
		OPERATIONAL	Increased operational and/or capital cost due to carbon taxes and/or investment in carbon emission mitigation measures leading to lower profitability of the companies.	Fossil fuel based power generation, cement, steel etc.
	NEUTRAL		Limited exposure to low carbon transition carbon risk. Though companies in this category could have exposure to physical risk and/or indirect exposure to low carbon transition risk via lending, investment etc.	Consumer staples, healthcare, etc.
Score = 10	SOLUTIONS		Potential to benefit through the growth of low-carbon products and services.	Renewable electricity, electric vehicles, solar cell manufacturers etc.

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 ESG Research is explained below.

Step 1: Measure Low Carbon Transition Risk Exposure

The first step towards measuring the Low Carbon Transition Risk Exposure for a company is the computation of its Carbon Intensity profile – which is informed by its Product Carbon Intensity, Operational Carbon Intensity and Total Carbon Intensity. In the next step, we compute Low Carbon Transition Risk Exposure Category and Score based on Total Carbon Intensity.

Step 2: Assess Low Carbon Transition Risk Management

In the second step, we assess a company's management of risks and opportunities presented by the low carbon transition. This assessment is based on policies and commitments to mitigate transition risk, governance structures, risk management programs and initiatives, targets and performance, and involvement in any controversies.

Step 3: Calculate Low Carbon Transition Category and Score

In the final step, the Low Carbon Transition Risk Exposure Category and Score that was calculated in Step 1 are adjusted for the strength of management efforts. Following this adjustment, Low Carbon Transition Risk Exposure Score of companies with top or second quartile risk management improves and some top and second quartile companies may move up one category.

Appendix II: Calculation of Target Metrics

Calculation of Weighted Average Carbon Emissions 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 Carbon Emissions Intensity =

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

Enterprise Value Inflation Adjustment Factor (EVIAF) =

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

Weighted Average Carbon Emissions Intensity of Parent Index =

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

Weighted Average Carbon Emissions Intensity of Derived Index =

$$\sum(Weight\ in\ Derived\ Index * \ Security\ Level\ Carbon\ Emissions\ Intensity)$$

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 Intensity =

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

Weighted Average Potential Emissions Intensity of Parent Index =

$$\sum(Weight\ in\ Parent\ Index * \ Security\ Level\ Potential\ Carbon\ Emissions\ Intensity)$$

Weighted Average Potential Emissions Intensity of Derived Index =

$$\sum(Weight\ in\ Derived\ Index * Security\ Level\ Potential\ Carbon\ Emissions\ Intensity)$$

Calculation of Average Decarbonization

On average, the Indexes follow a 7% decarbonization trajectory since Inception. The Weighted Average Carbon Intensity at Inception (W_1) is used to compute the target Weighted Average Carbon 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 Inception.

Thus, for the 3rd Semi-Annual Index Review since Inception (t=3), the target Weighted Average Carbon Intensity will be W_1*0.93.

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 CleanTech 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, deepwater, 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:

$$= \sum (Weight\ in\ Index * \ Fossil\ Fuels\ based\ Revenue\%)$$

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:

$$= \frac{Weighted\ Average\ Green\ Revenue\%}{Weighted\ Average\ Fossil\ Fuels\ based\ Revenue\%}$$

Appendix III: Decarbonization Trajectory of Indexes

The Weighted Average Carbon Intensity at Inception (W_1) is used to compute the target Weighted Average Carbon 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 Inception. The table below shows the Weighted Average Carbon Intensity at Inception (W_1) 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 Change Paris Aligned Low Carbon Select Index	MSCI World	June 01, 2020	218.86

Appendix IV: Iterative Down Weighting Process

The iterative down weighting process is applied on the securities of the Final Universe with the objective of meeting all the minimum requirements detailed in Table 1.

ITERATIVE DOWNWEIGHTING

Starting with the Final Universe, an iterative down weighting process is applied in order to meet with the minimum requirements for the Indexes. The iterative down weighting stops when all the requirements defined in above are met. The steps followed in the iterative downweighting (Exhibit 2) are outlined below:

Step 1. Check whether all targets for the Index are met. If all targets are met, then no downweighting is required.

Step 2. Securities in the Applicable Universe are sorted in increasing order of their Scope 1+2+3 Carbon Emissions Intensity and securities in the top half of the sorted list are identified as “Top Half” securities. Securities in the bottom half of the sorted list are identified as "Bottom Half” securities.

Step 3. If the target based on Minimum reduction in WACI relative to Parent Index and the Minimum average reduction in WACI (per annum) is not being met, the lowest ranked “Bottom Half” stock in ascending order of Scope 1+2+3 Carbon Emissions Intensity is selected for downweighting and the weight is reduced by 25% of its weight in the Final Universe. If this target is met, but

a. If the target based on Weighted Average Potential Emissions Intensity relative to Parent Index is not being met, the “Bottom Half” stock with highest Potential Carbon Emissions Intensity is downweighted.

b. Otherwise if the target based on Minimum ratio of Green Revenue/ Fossil Fuels based Revenue relative to Parent Index is not being met, the “Bottom Half” stock with largest difference between its Fossil Fuels based Revenue% and its Green Revenue% is downweighted

Step 4. If the targets are still not met, the stock is downweighted in steps of 25% of its weight in the Final Universe till a maximum downweighting of 75%.

Step 5. Stocks of the Final Universe in the "Top Half", belonging to the same "Climate Impact Sector" as the stock being downweighted are proportionally upweighted to ensure that the overall allocation to the High Climate Impact Sector is the same as that in the Parent Index and the sum of the weights of all constituents is 1.

Step 6. While upweighting stocks, the security weights of the stocks being upweighted is capped at 4%, with the excess weight being distributed among the remaining securities that are being upweighted.

Step 7. If the targets are still not met, the iterative process continues and Steps 3-6 are repeated.

Step 8. If the targets are not met and all "Bottom Half" stocks of the Final Universe are downweighted by 75% of the weight in the Final Universe, Steps 3-7 are repeated, with a maximum downweighting of 90% in a single downweighting step of 15 percentage points of the weight in the Final Universe.

Step 9. If the targets are not met after the maximum downweighting of 90% of all "Bottom Half" stocks, then stocks are iteratively excluded in the same order as outlined in Step 3.

Step 10. If the targets are not met after excluding all the "Bottom Half" stocks, then the index will rebalance using the constituents and weighting of stocks as after Step 9.

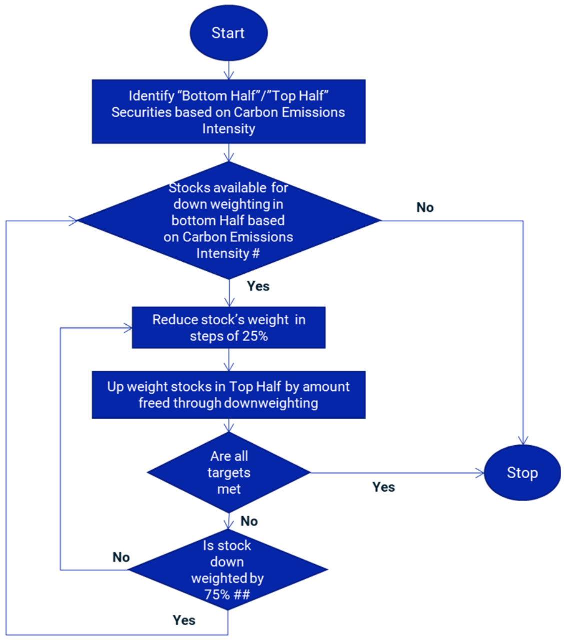

Exhibit 2: Schematic Representation of the Iterative Downweighting Process

If the target based on Minimum reduction in WACI relative to Parent Index and the Minimum average reduction in WACI (per annum) is being met but the target on Weighted Average Potential Emissions Intensity relative to Parent Index is not being met, the "Bottom Half" security with the highest Potential Carbon Emissions Intensity is selected for downweighting. If the target on Weighted Average Potential Emissions Intensity relative to Parent Index is also met but the target on Minimum ratio of Green Revenue/ Fossil Fuels based Revenue relative to Parent Index is not being met, the "Bottom Half" security with the highest difference in its Fossil Fuels based Revenue% and Green Revenue% is selected for downweighting.

If the targets are not met and all "Bottom Half" stocks of the Final Universe are downweighted by 75% of the weight in the Final Universe, maximum downweighting is relaxed to 90% in a single downweighting step of 15 percentage points of the weight in the Final Universe.

If the targets are not met after the maximum downweighting of 90% of all "Bottom Half" stocks, then stocks are iteratively excluded in the same order.

If the targets are not met after excluding all the "Bottom Half" stocks then the index will rebalance using the constituents and weighting of stocks at the final step.

Appendix V: Business Involvement Screening Criteria

Fossil Fuel Extraction and Refining

- **Thermal Coal Mining** - All companies deriving more than 5% 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
- **Unconventional Oil & Gas Extraction** - All companies deriving 5% or more revenues from oil sands, oil shale (kerogen-rich deposits), shale gas, shale oil, coal-seam gas, coal-bed methane as well as Arctic onshore/offshore reserves.
- **Arctic Oil & Gas**
  - All companies deriving 5% or more revenue from Arctic Oil
  - All companies deriving 5% or more revenue from Arctic Gas
  - All companies with evidence of producing Arctic oil. This factor does not capture revenue from non-extraction activities (e.g. exploration, surveying, processing, refining); ownership of Arctic oil reserves with no associated extraction revenues; revenue from intra-company sales
  - All companies with evidence of producing Arctic gas. This factor does not capture revenue from non-extraction activities (e.g. exploration, surveying, processing, refining); ownership of Arctic gas reserves with no associated extraction revenues; revenue from intracompany sales
- **Conventional Oil & Gas Extraction** - All companies deriving more than 5% revenue (either reported or estimated) from the production of deep water, shallow water, and other onshore/offshore oil and gas. It does not cover revenue from unconventional oil and gas production (oil sands, shale oil, shale gas) and onshore/offshore oil and gas production in the Arctic region.

- **Oil & Gas Refining** – All companies deriving 5% or more revenues from refining oil and gas.

Power Generation

- **Thermal Coal Power Generation** - All companies deriving 5% or more revenue (either reported or estimated) from thermal coal-based power generation
- **Oil Power Generation -** All companies deriving 5% or more revenue (either reported or estimated) from liquid fuel-based power generation

Values Based Exclusions

- **Controversial Weapons** – All companies involved in Controversial Weapons as defined by the Methodology of the MSCI Ex-Controversial Weapons Indexes.
- **Nuclear Weapons**
  - All companies deriving 0% or more revenue from the production of Nuclear Weapons and components
  - 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

- **Nuclear Power –** All companies deriving 1% or more revenue from nuclear power activities
- **Weapons** - All companies deriving 1% or more revenue from weapons systems, components, and support systems and services
- **Genetic Engineering -** All companies deriving 1% or more revenue from activities like genetically modifying plants, such as seeds and crops, and other organisms intended for agricultural use or human consumption
- **Stem Cell –** All companies that conduct stem cell research with cells derived from human embryos.

Controversies

- **Human Rights Compliance –** All companies that fail to comply with the United Nations Guiding Principles for Business and Human Rights
- **Labor Compliance –** All companies that fail to comply with the International Labor Organization's broader set of labor standards.

Appendix VI: Changes to this document

The following sections have been modified effective[18] September 08, 2021-

- Section 3.4 –
  - The revenue threshold for Thermal Coal based Power Generation exclusion lowered from 10% to 1%.
  - The revenue threshold for Oil and Gas related activities exclusion lowered from 10% to 5%.
- Appendix V –
  - The revenue threshold for Nuclear Weapons exclusion lowered from 5% to 0%
  - The revenue threshold for Nuclear Power exclusion lowered from 5% to 1%
  - The revenue threshold for Weapons exclusion lowered from 5% to 1%
  - The revenue threshold for Genetic Engineering exclusion lowered from 5% to 1%

The following sections have been modified effective[19] March 01, 2022-

- Section 3.4 – Updated to add exclusions based on thermal coal power and thermal coal reserves

The following sections have been modified effective June 01, 2022:

Appendix V: Business Exclusion Criteria

[18] This change in screening criteria was implemented in the index on September 8, 2021, effective on September 10, 2021, by excluding existing constituents which meet the updated exclusion criteria. The weights of the remaining securities were subsequently renormalized to 100%.

[19] 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%

- Updated to add new exclusion criteria for 'Nuclear Weapons', and 'Arctic Oil & Gas'

The following sections have been modified effective July 2023:

Methodology book was updated to reflect the transition of the MSCI Global Investable Market Indexes (GIMI) to Quarterly Comprehensive Index Reviews.

All references to "Semi-Annual Index Reviews" and "Quarterly Index Reviews" of the MSCI GIMI were replaced with "Index Reviews".

Section 2.4: Eligible Universe

- Clarified the exclusion criteria for companies involved in ESG Controversies

Section 4: MSCI ESG Research

- Moved section after the Section 3
- Updated the descriptions of MSCI ESG Research products.

Contact us

msci.com/contact-us

AMERICAS

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

EUROPE, MIDDLE EAST & AFRICA

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

ASIA PACIFIC

China North	10800 852 1032 *
China South	10800 152 1032 *
Hong Kong	+ 852 2844 9333
Mumbai	+ 91 22 6784 9160
Seoul	00798 8521 3392 *
Singapore	800 852 3749 *
Sydney	+ 61 2 9033 9333
Taipei	008 0112 7513 *
Thailand	0018 0015 6207 7181 *
Tokyo	+ 81 3 5290 1555

* toll-free

About MSCI

MSCI is a leading provider of critical decision support tools and services for the global investment community. With over 50 years of expertise in research, data and technology, we power better investment decisions by enabling clients to understand and analyze key drivers of risk and return and confidently build more effective portfolios. We create industry-leading research-enhanced solutions that clients use to gain insight into and improve transparency across the investment process.

To learn more, please visit www.msci.com.

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*.

Notice and disclaimer

This document and all of the information contained in it, including without limitation all text, data, graphs, charts (collectively, the "Information") is the property of MSCI Inc. or its subsidiaries (collectively, "MSCI"), or MSCI's licensors, direct or indirect suppliers or any third party involved in making or compiling any Information (collectively, with MSCI, the "Information Providers") and is provided for informational purposes only. The Information may not be modified, reverse-engineered, reproduced or redisseminated in whole or in part without prior written permission from MSCI. All rights in the Information are reserved by MSCI and/or its Information Providers.

The Information may not be used to create derivative works or to verify or correct other data or information. For example (but without limitation), the Information may not be used to create indexes, databases, risk models, analytics, software, or in connection with the issuing, offering, sponsoring, managing or marketing of any securities, portfolios, financial products or other investment vehicles utilizing or based on, linked to, tracking or otherwise derived from the Information or any other MSCI data, information, products or services.

The user of the Information assumes the entire risk of any use it may make or permit to be made of the Information. NONE OF THE INFORMATION PROVIDERS MAKES ANY EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION (OR THE RESULTS TO BE OBTAINED BY THE USE THEREOF), AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, EACH INFORMATION PROVIDER EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES (INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF ORIGINALITY, ACCURACY, TIMELINESS, NON-INFRINGEMENT, COMPLETENESS, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) WITH RESPECT TO ANY OF THE INFORMATION.

Without limiting any of the foregoing and to the maximum extent permitted by applicable law, in no event shall any Information Provider have any liability regarding any of the Information for any direct, indirect, special, punitive, consequential (including lost profits) or any other damages even if notified of the possibility of such damages. The foregoing shall not exclude or limit any liability that may not by applicable law be excluded or limited, including without limitation (as applicable), any liability for death or personal injury to the extent that such injury results from the negligence or willful default of itself, its servants, agents or sub-contractors.

Information containing any historical information, data or analysis should not be taken as an indication or guarantee of any future performance, analysis, forecast or prediction. Past performance does not guarantee future results.

The Information should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. All Information is impersonal and not tailored to the needs of any person, entity or group of persons.

None of the Information constitutes an offer to sell (or a solicitation of an offer to buy), any security, financial product or other investment vehicle or any trading strategy.

It is not possible to invest directly in an index. Exposure to an asset class or trading strategy or other category represented by an index is only available through third party investable instruments (if any) based on that index. MSCI does not issue, sponsor, endorse, market, offer, review or otherwise express any opinion regarding any fund, ETF, derivative or other security, investment, financial product or trading strategy that is based on, linked to or seeks to provide an investment return related to the performance of any MSCI index (collectively, "Index Linked Investments"). MSCI makes no assurance that any Index Linked Investments will accurately track index performance or provide positive investment returns. MSCI Inc. is not an investment adviser or fiduciary and MSCI makes no representation regarding the advisability of investing in any Index Linked Investments.

Index returns do not represent the results of actual trading of investible assets/securities. MSCI maintains and calculates indexes, but does not manage actual assets. The calculation of indexes and index returns may deviate from the stated methodology. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the index or Index Linked Investments. The imposition of these fees and charges would cause the performance of an Index Linked Investment to be different than the MSCI index performance.

The Information may contain back tested data. Back-tested performance is not actual performance, but is hypothetical. There are frequently material differences between back tested performance results and actual results subsequently achieved by any investment strategy.

Constituents of MSCI equity indexes are listed companies, which are included in or excluded from the indexes according to the application of the relevant index methodologies. Accordingly, constituents in MSCI equity indexes may include MSCI Inc., clients of MSCI or suppliers to MSCI. Inclusion of a security within an MSCI index is not a recommendation by MSCI to buy, sell, or hold such security, nor is it considered to be investment advice.

Data and information produced by various affiliates of MSCI Inc., including MSCI ESG Research LLC and Barra LLC, may be used in calculating certain MSCI indexes. More information can be found in the relevant index methodologies on www.msci.com.

MSCI receives compensation in connection with licensing its indexes to third parties. MSCI Inc.'s revenue includes fees based on assets in Index Linked Investments. Information can be found in MSCI Inc.'s company filings on the Investor Relations section of msci.com.

MSCI ESG Research LLC is a Registered Investment Adviser under the Investment Advisers Act of 1940 and a subsidiary of MSCI Inc. Neither MSCI nor any of its products or services recommends, endorses, approves or otherwise expresses any opinion regarding any issuer, securities, financial products or instruments or trading strategies and MSCI's products or services are not a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such, provided that applicable products or services from MSCI ESG Research may constitute investment advice. MSCI ESG Research materials, including materials utilized in any MSCI ESG Indexes or other products, have not been submitted to, nor received approval from, the United States Securities and Exchange Commission or any other regulatory body. MSCI ESG and climate ratings, research and data are produced by MSCI ESG Research LLC, a subsidiary of MSCI Inc. MSCI ESG Indexes, Analytics and Real Estate are products of MSCI Inc. that utilize information from MSCI ESG Research LLC. MSCI Indexes are administered by MSCI Limited (UK).

Please note that the issuers mentioned in MSCI ESG Research materials sometimes have commercial relationships with MSCI ESG Research and/or MSCI Inc. (collectively, "MSCI") and that these relationships create potential conflicts of interest. In some cases, the issuers or their affiliates purchase research or other products or services from one or more MSCI affiliates. In other cases, MSCI ESG Research rates financial products such as mutual funds or ETFs that are managed by MSCI's clients or their affiliates, or are based on MSCI Inc. Indexes. In addition, constituents in MSCI Inc. equity indexes include companies that subscribe to MSCI products or services. In some cases, MSCI clients pay fees based in whole or part on the assets they manage. MSCI ESG Research has taken a number of steps to mitigate potential conflicts of interest and safeguard the integrity and independence of its research and ratings. More information about these conflict mitigation measures is available in our Form ADV, available at https://adviserinfo.sec.gov/firm/summary/169222.

Any use of or access to products, services or information of MSCI requires a license from MSCI. MSCI, Barra, RiskMetrics, IPD and other MSCI brands and product names are the trademarks, service marks, or registered trademarks of MSCI or its subsidiaries in the United States and other jurisdictions. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P Global Market Intelligence. "Global Industry Classification Standard (GICS)" is a service mark of MSCI and S&P Global Market Intelligence.

MIFID2/MIFIR notice: MSCI ESG Research LLC does not distribute or act as an intermediary for financial instruments or structured deposits, nor does it deal on its own account, provide execution services for others or manage client accounts. No MSCI ESG Research product or service supports, promotes or is intended to support or promote any such activity. MSCI ESG Research is an independent provider of ESG data.

Privacy notice: For information about how MSCI collects and uses personal data, please refer to our Privacy Notice at https://www.msci.com/privacy-pledge.