

MSCI Climate Change ESG Select Indexes Methodology

November 2023

Contents

1	Introduction.....	3
2	Index Construction Methodology.....	4
2.1	Eligible Universe	4
2.2	Eligibility Criteria	4
2.2.1	Controversial Business Involvement Criteria	4
2.2.2	ESG Ratings Eligibility	5
2.2.3	ESG Controversies Score Eligibility.....	5
2.3	Issuer Capping	6
2.4	Treatment of Unrated Companies	6
3	Maintaining the Indexes	7
3.1	Quarterly Index Reviews	7
3.2	Ongoing Event Related Changes	7
4	MSCI ESG Research.....	9
4.1	MSCI ESG Ratings.....	9
4.2	MSCI ESG Controversies	9
4.3	MSCI ESG Business Involvement Screening Research.....	9
4.4	MSCI Climate Change Metrics	9
	Appendix I: Controversial Business Involvement Criteria	11
	Appendix II: Calculation of Target Metrics	14
	Appendix III: Changes to this Document.....	19

1 Introduction

The MSCI Climate Change ESG Select Indexes¹ (the “Indexes”) aim to represent the performance of an investment strategy that re-weights securities based on the opportunities and risks associated with the transition to a lower carbon economy. The Indexes² are designed to exceed the minimum standards of the EU Climate Transition Benchmark (CTB). The Indexes apply a heuristics-based approach to meet the following objectives:

- Reduce the weighted average greenhouse gas intensity by 30% (compared to the underlying investment universe).
- Reduce the weighted average greenhouse gas (GHG) intensity by 7% on an annualized basis
- Reduce the weighted average potential emissions intensity by 30% (compared to the underlying investment universe).
- Have at least equivalent ratio of weighted average “Green Revenues” to weighted average “Fossil fuels-based Revenues” as that of the underlying investment universe.

The Indexes are constructed based on the MSCI Climate Change Indexes methodology³ while incorporating additional business involvement screens. Additionally, companies with an MSCI ESG Rating below BB and companies not in compliance with the United Nations Global Compact principles are excluded from the Index.

The Indexes are diversified by capping issuers at 10%⁴.

¹ This methodology book covers the following Indexes:

- MSCI World Climate Change ESG Select Index
- MSCI USA Climate Change ESG Select Index
- MSCI Europe Climate Change ESG Select Index
- MSCI EMU Climate Change ESG Select Index
- MSCI Japan Climate Change ESG Select Index
- MSCI Germany Climate Change ESG Select Index

² 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).

³ For more information, please refer to the MSCI Climate Change Indexes Methodology at <https://www.msci.com/index-methodology>

⁴ For more information, please refer to the MSCI Capped Indexes Methodology at <https://www.msci.com/index-methodology>

2 Index Construction Methodology

The Indexes Use Company Ratings And Research Provided By MSCI ESG Research⁵ To Determine Eligibility For Index Inclusion .

2.1 Eligible Universe

The Eligible Universe for the Indexes are constructed from the constituents of their corresponding market capitalization weighted indexes (the “Parent Indexes”) after excluding companies from the following Global Industry Classification Standard (GICS®)⁶ Sub Industries:

- Oil & Gas Drilling
- Oil & Gas Equipment & Services
- Oil & Gas Storage & Transportation.

2.2 Eligibility Criteria

Securities are selected and weighted in accordance with the MSCI Climate Change Indexes⁷ Methodology.

2.2.1 Controversial Business Involvement Criteria

The Indexes use MSCI ESG Business Involvement Screening Research and MSCI Climate Change Metrics to identify companies that are involved in the following business activities. Companies that meet the business involvement criteria are excluded from the Indexes:

- Controversial Weapons
- Nuclear Weapons
- Tobacco
- Thermal Coal

⁵ 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.

⁶ GICS, the Global Industry Classification Standard jointly developed by MSCI and S&P Global.

⁷ As per Appendix IV (Iterative Downweighting to meet the minimum EU CTB requirements) of the MSCI Climate Change Indexes Methodology, companies in the Solutions category as per Low Carbon Transition Risk Assessment are not eligible for downweighting. However, this rule was not applied for the MSCI Germany Climate Change ESG Select Index at the time of the May, August and November 2023 Index Reviews in order to ensure rebalancing feasibility.

- Conventional Oil & Gas
- Unconventional Oil and Gas
- Nuclear-based Power Generation
- Global Norms – United Nations Global Compact Compliance
- Human Rights Concerns Controversies
- Scope 1+2 Emissions Intensity
- Energy Consumption Intensity
- Nuclear Mining
- Civilian Firearms
- Weapons

Please refer to Appendix I for details on the screens.

2.2.2 ESG Ratings Eligibility

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

2.2.3 ESG Controversies Score Eligibility

All Companies assessed having involvement in ESG Controversies that are classified as Red (MSCI Controversy Score of 0) or Orange flags (score of 1).

- A Red Flag indicates an ongoing, Very Severe ESG controversy implicating a company directly through its actions, products, or operations.
- An Orange Flag indicates an ongoing Severe ESG controversy implicating a company directly, or a Very Severe ESG controversy that is either partially resolved or indirectly attributed to the company's actions,

Companies are required to have an MSCI ESG Controversies that are classified as Orange Flags (Score of 1) or above to be eligible for inclusion in the Indexes.

Companies not assessed by MSCI ESG Research on MSCI ESG Controversies are not eligible for inclusion in the Indexes.

2.3 Issuer Capping

The maximum weight of any issuer in the Index is capped at 10% in accordance with the MSCI Capped Indexes methodology⁸.

2.4 Treatment of Unrated Companies

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

- ESG Ratings
- ESG Controversies

For the treatment of companies where the Scope 1+2+3 Emissions Intensity is not available, please refer to Appendix 3.

⁸ Please refer to the MSCI Capped Indexes methodology at www.msci.com/index-methodology.

3 Maintaining the Indexes

3.1 Quarterly Index Reviews

The Index is reviewed to coincide with the regular Index Reviews of the MSCI Global Investable Market Indexes. The changes are implemented as of the close of the last business day of February, May, August and November.

In general, MSCI uses MSCI ESG Research data⁹ (including MSCI ESG Ratings, MSCI ESG Controversies, MSCI ESG Business Involvement Screening Research and MSCI Climate Change Metrics) as of the end of the month preceding the Index Reviews for the rebalancing of the Index. For some securities, such data may not be published by MSCI ESG Research by the end of the month preceding the Index Review. For such securities, MSCI will use ESG data published after the end of month, when available, for the rebalancing of the Index.

The pro forma Index is in general announced nine business days before the effective date.

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 MSCI Climate Change 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.

⁹ 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 Index is a product of MSCI Inc. that utilizes 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 Index uses the following MSCI ESG Research products: MSCI ESG Ratings, MSCI ESG Controversies, MSCI ESG Business Involvement Screening Research and MSCI Climate Change Metrics. MSCI Indexes are administered by MSCI Limited.

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/esg-and-climate-methodologies>.

4.2 MSCI ESG Controversies

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

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

4.3 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

4.4 MSCI Climate Change Metrics

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



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

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

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

Appendix I: Controversial Business Involvement Criteria

- **Carbon Emissions Intensity**
 - All companies with a Carbon Emissions Intensity (Scope 1+2) of more than 1500 tCO2/\$M Sales
- **Civilian Firearms**
 - All companies that derive 5% or more revenue from the manufacture and retail of civilian firearms and ammunition.
- **Controversial Weapons**
 - All companies that have any tie to Controversial Weapons.
- **Energy Consumption Intensity**
 - All companies with more than 300 Energy consumption (GWh) per million EUR revenue
- **Global Norms – United Nations Global Compact Compliance**
 - All companies that fail to comply with the United Nations Global Compact principles.
- **Human Rights Concerns Controversies**
 - All companies which are flagged for Severe and Very Severe controversy related to Human Rights violation in the last three years.
- **Nuclear-based Power Generation**
 - All companies deriving 5% or more higher percent of revenue from supplying key nuclear specific products or services to the nuclear power industry.
 - All companies deriving 5% or more revenue (either reported or estimated) from nuclear power activities.
- **Nuclear Mining**
 - All companies deriving 5% or more revenue from the mining of uranium.
- **Nuclear Weapons**
 - All companies that have any tie to nuclear weapons.
- **Conventional Oil & Gas**
 - All companies that derive 5% or more revenue (either reported or estimated) from the extraction and production of oil and gas.

- All companies that derive 10% or more revenue (either reported or estimated) from liquid fuel based power generation.
- **Tobacco**
 - All companies that manufacture tobacco products, such as cigars, blunts, cigarettes, e-cigarettes, inhalers, beedis, kreteks, smokeless tobacco, snuff, snus, dissolvable and chewing tobacco. This also includes companies that grow or process raw tobacco leaves.
 - All companies that derive 5% or more revenue from tobacco-related business activities.
- **Thermal Coal**
 - All companies deriving more than 0% 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.
 - All companies that disclose evidence of thermal coal production.
 - All companies deriving 5% or more revenue (either reported or estimated) from thermal coal based power generation
- **Unconventional Oil & Gas**
 - All companies deriving more than 0% revenue from unconventional oil and gas. It includes revenues from oil sands, oil shale (kerogen-rich deposits), shale gas, shale oil, coal seam gas, and coal bed methane. It excludes all types of conventional oil and gas production including Arctic onshore/offshore, deepwater, shallow water and other onshore/offshore.
 - All companies that provide evidence of producing shale oil and gas.
 - All companies that provide evidence of producing oil sands.
 - All companies deriving more than 0% revenue from Arctic oil.
 - All companies deriving more than 0% revenue from Arctic gas.
 - All companies with evidence of producing Arctic oil. It excludes 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. It excludes revenue from non-extraction activities (e.g. exploration, surveying, processing, refining); ownership of Arctic gas reserves with no associated extraction revenues; revenue from intra-company sales.



- **Weapons**

- All companies deriving 5% or more aggregate revenue from weapons systems, components, and support systems and services.

Appendix II: Calculation of Target Metrics

Greenhouse Gas (GHG) Emissions Intensity

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

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

Calculation of GHG Intensity

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 =

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

Enterprise Value Inflation Adjustment Factor (EVIAF)¹⁰ =

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

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.

¹⁰ Average Enterprise Value + Cash is calculated for securities in the Eligible Universe

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 =

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

Weighted Average Potential Emissions Intensity of Derived Index =

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

Calculation of Average Decarbonization

On average, the Indexes follow a 7% 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.

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

Where 't' is the number of Semi-Annual Index Reviews since the Base Date.

Thus, for the 3rd Semi-Annual Index Review since the Base Date (t=3), the target Weighted Average GHG Intensity 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 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:

$$= \frac{\text{Weighted Average Green Revenue}\%}{\text{Weighted Average Brown Revenue}\%}$$

Climate Impact Sectors

NACE¹¹ 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 Climate Impact" sector and other stocks are classified 'Low Climate Impact' sector. The GICS¹² 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 mapping¹³ 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

¹¹ For further details regarding NACE, please refer to https://ec.europa.eu/eurostat/statistics-explained/index.php?title=NACE_background

¹² For further information regarding GICS, please refer to <https://www.msci.com/gics>

¹³ This mapping is available in the [Handbook of Climate Transition Benchmarks, Paris-Aligned Benchmark and Benchmarks' ESG Disclosures](#). Please note that the mapping does not reflect changes in the GICS structure that were implemented in the MSCI indexes on June 1, 2023.



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

Appendix III: Changes to this Document

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

- Introduction – Updated to reflect the new screen for ‘arctic oil & gas’
- Section 2.2.1: Updated to reflect the new screen for ‘arctic oil & gas’
- Appendix I: Updated to reflect the revised screens for ‘thermal coal’ and ‘unconventional oil & gas’ and the new screen for ‘arctic oil & gas’

The following sections have been modified effective May 01, 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 4: MSCI ESG Research

- Moved that section after the Section 3
- Added the definition of industry-adjusted ESG score under Section 4.1 (MSCI ESG Ratings)

The following section has been modified effective September 01, 2023:

- Section 2.2: Updated footnote to clarify treatment at the August 2023 Index Review
- Section 2.2.3: Clarified the exclusion criteria for companies involved in ESG Controversies.

The following section has been modified effective December 01, 2023:

- Section 2.1: Updated to reflect the exclusion of select GICS® sub-industries.
- Section 2.2.1: Updated to reflect the new screen for ‘conventional oil and gas’ and the revised screen for thermal coal based power generation.
- Section 2.4: Added a section for the treatment of unrated companies.
- Section 2.2.3: Clarified the exclusion criteria for companies involved in ESG Controversies.
- Appendix I: Updated the description for the new and revised screens
- Appendix II: Added the calculation of target metrics for carbon emissions intensity, potential emissions, average decarbonization, calculation of green-to-brown revenue and details on the climate impact sector.



- Appendix III – Updated references on NACE and GICS mapping

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