Morningstar Indexes

Construction Rules for the Morningstar EU Climate Enhanced Index Family

August 2026

Overview

The Morningstar® EU Climate Enhanced Indexes, which include Climate Transition Benchmark and Paris Aligned Benchmark variations, are designed to achieve the minimum standards laid out in the European Union delegated acts. The indexes seek to reward companies that have lower carbon intensity than peers using a constrained optimization framework that aims to minimize tracking error and improve diversification relative to the parent benchmark. The index family makes use of carbon emissions, product involvement, global standards screening, and ESG controversy data provided by Sustainalytics, a Morningstar company that provides sustainability research.

To forecast tracking error of the index portfolios, Morningstar uses the Morningstar Global Industry Standard Risk Model (the risk model and the currency are in euros). For more information on the risk model, refer to Morningstar Risk Model Methodology.

For further information on ESG data used in the index, please see the Morningstar ESG Index Glossary.

Index Inception and Performance Start Date

The index inception date is Nov. 27, 2025, and the performance start date, when the first backtested index value was calculated, is Dec. 19, 2014.

Index Construction

Methodology Summary

Starting Universe	Eligibility	Portfolio Construction	
• Parent benchmark is the Morningstar Global Target Market Exposure Index family (represents top 85% of the investable market)	• Apply respective region/country filters for individual variants: • Developed Markets • Developed Markets Europe • US • Emerging Markets • Global • Morningstar Developed Markets ex-US • Apply baseline exclusions • Apply activity-based exclusions (only valid for PAB)	• The companies within the eligible universe are allocated weight in a manner to minimize tracking error, subject to the emissions reduction, diversification constraints, and the UCITS BAC capping of (5-10-40) through optimization process. • The company optimal weights are redistributed within the available share classes in the ratio of their parent benchmark weights. • The index is reconstituted semiannually and rebalanced quarterly. • During rebalance, only parent eligibility and controversy score are checked. BAC (5-10-40) capping is applied every quarter.	Morningstar EU Climate Enhanced Index Family

For additional details, refer to the following section.

Starting Universe

At each reconstitution, securities for the Morningstar® Climate Transition and Paris Aligned Benchmark Enhanced Index Family are derived from the large-mid securities of Morningstar's region-specific Target Market Exposure Index. For more details on benchmark construction, refer to the construction rules for the Morningstar Global Target Market Exposure Indexes.

Eligibility

To be eligible for index inclusion, all constituents must meet the following criteria.

- Baseline requirements
  - The company must not have a severe controversy rating (or a level of 5).
  - The company must not be noncompliant with the principles of the United Nations Global Compact.
  - The company must not have any revenue involvement in tobacco products (production).
  - The company must not have any direct involvement in controversial weapons, essential or nonessential, including:
    - Antipersonnel mines
    - Biological and chemical weapons

        - Cluster weapons
        - Depleted uranium
        - White phosphorus
- Activity-based exclusions (apply only to Paris Aligned Indexes)
    - The company must not have any revenue involvement in the following activities:
        - Thermal coal (extraction)
        - Thermal coal (supporting products/services)
    - The company must not have greater than or equal to 10% revenue involvement in the following activities:
        - Oil and gas (production)
        - Oil and gas (supporting products/services)
    - The company must not have 50% or more combined revenue from oil and gas generation and coal power generation.

    For both baseline and activity-based exclusions, companies with missing values for any of the above screens would be excluded. For more details, refer to Appendix 4.

Portfolio Construction

At each semiannual reconstitution, the Morningstar® EU Climate Enhanced Index Family is created using optimization to meet the objective and constraints as follows.

Objective Function

Minimize ex-ante tracking error relative to parent index.

Constraints

- No short positions are allowed.
- Maximum company weight = minimum (company benchmark weight × 20, company benchmark weight + 2%, 10%)
- Minimum company weight = maximum (company benchmark weight × 1%, company benchmark weight – 2%)
- Morningstar Global Equity Classification Structure sector active weight constraints: To limit deviation from corresponding weights in the parent benchmark, the sector weights in the index are maintained within a lower and upper bound, calculated as:
    - Lower bound = weight in the benchmark - 5%
    - Upper bound = weight in the benchmark + 5%

    The energy sector remains unconstrained.
- Country active weight constraints: To limit deviation from corresponding weights in the parent benchmark, the country of classification weights in the index are maintained within a lower and upper bound, calculated as:
    - Lower bound = weight in the benchmark - 5%

- Upper bound = weight in the benchmark + 5%
- The cumulative high-impact NACE sector weight of the index should be greater than or equal to 1.05 x compared with the benchmark high-impact NACE sector weight. For more details on the NACE sections, refer to Appendix 6.
  - The cumulative weight of companies having a weight of greater than 5% should be less than or equal to 40%.
  - The maximum one-way turnover should be less than or equal to 5% at semiannual reconstitution.
  - 7% annual geometric average reduction in the index's weighted average carbon intensity (scope 1 + 2 +3 based on EVIC) with respect to the portfolio intensity on the reconstitution date of the previous year
  - The minimum reduction in weighted average carbon intensity (scope 1 + 2 +3 based on EVIC) should be less than or equal to the following relative targets:
    - 30% relative to the parent index for the Climate Transition Benchmarks
    - 50% relative to the parent index for the Paris Aligned Benchmarks

For more details on optimized construction, refer to Appendix 7.

The company optimal weights are redistributed within the available share classes of a company in the ratio of their parent benchmark weights.

Number of Stocks
The number of stocks in the index is variable, subject to the size of the starting universe and the application of eligibility criteria at the time of reconstitution.

Index Weighting
The weights of index constituents are determined through an optimization process subject to the objective function and weight constraints described above.

Index Maintenance and Calculation

The index is reconstituted, where the membership is reset, semi-annually on the third Friday of June and December. Adjustments are implemented after Friday's market close and reflected the following Monday. The market data used for reconstitution is as of the last trading day of April and October.

The index is rebalanced quarterly on the third Friday of March, June, September, and December. Adjustments are implemented after Friday's market close and reflected the following Monday. If Monday is an index holiday, the rebalance is reflected on the next business day. The market data used for rebalancing is as of the last trading day of February, May, August, and November. The market, EVIC, NACE, and ESG (including emissions and product involvement) data used for reconstitution is as of the last trading day of May and November. During quarterly reviews on the third Friday of March and September, constituents with a controversy rating of 5 are deleted from the index. Parent index eligibility is maintained during the quarterly reviews. The UCITS B-A-C (5-10-40) capping at company level is additionally maintained.

Index files are published according to the Global calendar schedule. For more information, please refer to the Morningstar Indexes Holiday Calendar.

Corporate Actions

The treatment of corporate actions will be as per the alternatively weighted indexes corporate action methodology. For more details, please refer to the Morningstar Equity Indexes Corporate Action Methodology.

Index Calculation and Price Data

Details about index calculations and price data can be found in their respective rulebooks: Morningstar Equity Indexes Calculation Methodology and Morningstar Equity Indexes Price Methodology.

Methodology Review and Index Decommissioning Policy

The index methodology is continually reviewed to ensure it achieves all stated objectives. These reviews consider corporate action treatment, eligibility requirements, and maintenance procedures. Subscribers to the index will be notified before any methodology changes are made. For more details, refer to the Morningstar Index Methodology Change Policy.

Morningstar Indexes notifies all subscribers and stakeholders of the index that circumstances might arise that require a material change to, or a possible cessation of, the index. These circumstances are generally not within Morningstar's control and may include significant changes to the underlying market structure, inadequate access to necessary data, geopolitical events, and regulatory changes. In addition, factors such as low usage or methodology convergence may result in the cessation of an index.

Because the decommissioning of the index or benchmark index could disrupt subscriber products that reference this index, all subscribers are encouraged to have robust fallback procedures in the event an index is decommissioned. For more details, refer to the Morningstar Index Decommissioning Policy.

Data Correction and Precision

Intraday Index Data Corrections

Commercially reasonable efforts are made to ensure the accuracy of data used in real-time index calculations. If incorrect price or corporate action data affects index calculations, corrections are applied prospectively.

Index-Related Data and Divisor Corrections

Incorrect pricing and corporate action data for individual issues in the database will generally be corrected upon detection. In addition, an incorrect divisor of an index, if discovered within two days of its occurrence, will be fixed retroactively on the day it is discovered to prevent an error from being carried forward. Commercially reasonable efforts are made to correct an older error subject to its significance and feasibility.

For more details, refer to the Morningstar Indexes Recalculation Guidelines.

Exceptions

While Morningstar will seek to apply the method described above, the market environment, supervisory, legal, financial, or tax reasons may require an alternative approach to be adopted. A decision to take an alternative approach will be made by the relevant Morningstar Index Methodology Committee, and in all instances, the application of a nonstandard process will be reported to the Morningstar Index Oversight Committee.

Appendixes

Appendix 1: Modifications to the Rulebook

Section	Description of Change	Update Date
Appendix 6: Climate Impact Sectors	Updated high-climate-impact NACE section references from Section L to Section M for real estate activities and added clarification regarding historical NACE classification treatment.	August 2026

Appendix 2: Glossary

Term	Description
Reconstitution	During each reconstitution, the steps mentioned in the index construction process are performed, resulting in membership reset.
Rebalance	During each rebalancing, the weights are adjusted for updated free-float and shares outstanding data.
Inception Date	The date when the live index calculations start.
Performance History Start Date	The beginning of the index history, inclusive of backtested performance.

Appendix 3: Calculations of Carbon, or Greenhouse Gas, Intensity Target Metrics

The total emission of a security is defined as the sum of scope 1, scope 2, and scope 3 emissions. Enterprise value including cash (or EVIC) is the sum, at fiscal year-end, of the market capitalization of ordinary shares, the market capitalization of preferred shares, and the book value of total debt and noncontrolling interests, without the deduction of cash or cash equivalents. The carbon intensity of a security is defined as the ratio of the total emissions (in metric tons) adjusted for the inflation in EVIC and the EVIC of the company (in millions of U.S. dollars).

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 Morningstar Global Target Market Exposure Large Mid Index in the same NACE section in which the constituent belongs is used. Securities with null NACE section are additionally excluded. A valid carbon intensity value can only be calculated if both the emissions and EVIC values are available for the company.

Where a company's total reported emissions show a material deviation from the previous reconstitution, and this deviation is assessed through Morningstar Indexes' quality-assurance review to be driven by reporting timing issues or partial reporting (for example, delayed disclosure of Scope 3 financed emissions), the emissions value from the prior reconstitution may be carried forward for up to two subsequent reconstitution periods. This rule applies only to ongoing index maintenance and does not affect simulated index history.

$$Total\ Emissions = (Scope\ 1 + Scope\ 2 + Scope\ 3)\ Emissions$$

$$Greenhouse\ Gas\ Intensity = \frac{Total\ Emissions}{Enterprise\ Value\ Including\ Cash\ (in\ Mn\ USD)}$$

$$Security\ Level\ Carbon\ Intensity = \frac{Total\ Emissions\ (1 + EVIAF)}{Enterprise\ Value\ Including\ Cash\ (in\ Mn\ USD)}$$

$$^{*}\ Enterprise\ Value\ Inflation\ Factor\ (EVIAF) = \frac{Average\ Enterprise\ Value\ Inclusing\ Cash}{Previous\ Average\ Enterprise\ Value\ Including\ Cash} - 1$$

$$Enterprise\ Value\ Including\ Cash\ (EVIC) = (MktCapOrdinary_{Shares} + MktCap_{Preferred\ Shares} + BV_{Debt} + NCI$$

$$Weighted\ Average\ Carbon\ (GHG) Intensity = \sum(Index\ Weight * Security\ Level\ GHG\ Intensity)$$

*The inflation adjustment factor is calculated at the parent index level.
*Carbon intensity of securities is adjusted by the EVIAF factor only during those reconstitutions when we observe an increase in the average EVIC value as compared with the previous reconstitution. In case of a decrease, the EVIAF is set to 1.

Calculation of Target High-Impact NACE Section Weights

The target weight of the high-impact sector group is set at 1.05 x its cumulative weight in the parent index.

Calculation of Average Decarbonization

The climate transition and Paris-aligned indexes follow a 7% decarbonization trajectory since the base date. The weighted average greenhouse gas intensity of the index at the previous semiannual effective reconstitution date is used to compute the target weighted average greenhouse gas intensity at any given semiannual index review, according to the following formula.

$CI_T = CI_{T-1} * (1 - (0.07))^{(1/2)}$ *where T starts and 1 and is increased in steps of 1.*

The base date for all carve-outs is set at June 21, 2021, which is considered as C_0. CI_{T-1} is the achieved carbon intensity of the portfolio on the previous semi-annual effective reconstitution date.

We also aim to achieve a minimum 50% reduction in greenhouse gas intensity with respect to the custom benchmark index on each reconstitution date. The minimum of these two intensity targets is set as the target portfolio intensity.

Index Name	**Base Date**	**Benchmark Intensity (MT CO_2/Mn USD EVIC))**	**Portfolio Intensity (MT CO_2/Mn USD (EVIC))**
Morningstar Global Paris Aligned Benchmark Enhanced Index	June 21, 2021	337.7	168.7
Morningstar US Paris Aligned Benchmark Enhanced Index	June 21, 2021	232.1	115.5
Morningstar Developed Markets Paris Aligned Benchmark Enhanced Index	June 21, 2021	330.1	164.8
Morningstar Developed Markets Europe Paris Aligned Benchmark Enhanced Index	June 21, 2021	528.6	264.2
Morningstar Emerging Markets Paris Aligned Benchmark Enhanced Index	June 21, 2021	389.0	194.5
Morningstar Developed Markets ex-US Paris Aligned Benchmark Enhanced Index	June 21, 2021	516.0	257.8
Morningstar Global Climate Transition Benchmark Enhanced Index	June 21, 2021	337.7	236.3
Morningstar US Climate Transition Benchmark Enhanced Index	June 21, 2021	232.1	162.1
Morningstar Developed Markets Climate Transition Benchmark Enhanced Index	June 21, 2021	330.1	230.8
Morningstar Developed Markets Europe Climate Transition Benchmark Enhanced Index	June 21, 2021	528.6	370.0
Morningstar Emerging Markets Climate Transition Benchmark Enhanced Index	June 21, 2021	389.0	272.0
Morningstar Developed Markets ex-US Climate Transition Benchmark Enhanced Index	June 21, 2021	516.0	361.2

Appendix 4: Baseline and Activity-Based Exclusions

Detailed Criteria	Backfill Date*	Missing Data Treatment #	Threshold for Climate Transition Indexes	Threshold for Paris-Aligned Indexes
Highest Controversy Level	–	Exclude	Controversy Rating of 5 excluded	Controversy Rating of 5 excluded
UNGC Compliance Status	–	Include before Dec. 19, exclude from Dec. 19	Noncompliant	Noncompliant
Anti-Personnel Mines–Category of Involvement	December 2020	Include before December 2020, exclude from December 2020	AP1, AP3	AP1, AP3
Biological and Chemical Weapons–Category of Involvement	December 2020	Include before December 2020, exclude from December 2020	BC1, BC3	BC1, BC3
Cluster Weapons–Category of Involvement	December 2020	Include before December 2020, exclude from December 2020	CM1, CM3	CM1, CM3
Depleted Uranium–Category of Involvement	December 2020	Include before December 2020, exclude from December 2020	DU1, DU3	DU1, DU3
White Phosphorous–Category of Involvement	December 2020	Include before December 2020, exclude from December 2020	WP1, WP3	WP1, WP3
Oil and Gas (Production)–Level of Involvement	December 2019	Exclude	NA	Greater than 2
Oil and Gas (Supporting Products & Services)	December 2019	Exclude	NA	Greater than 2
Tobacco Products (Production)	December 2019	Exclude	Any involvement	Any involvement
Thermal Coal (Extraction)	December 2019	Exclude	NA	Any involvement
Thermal Coal (Supporting Products and Services)	March 2022	Exclude	NA	Any involvement

Thermal Coal Power Generation Revenue	December 2020	Exclude	NA	a%*
Oil and Gas Power Generation Revenue	March 2021	Exclude	NA	b%*

*a+b% is greater than or equal to 50%.

Level of involvement key:
Level of involvement 1 – 0%-4.9%
Level of involvement 2 – 5%-9.9%
Level of involvement 3 – 10%-24.9%
Level of involvement 4 – 25%-49.9%
Level of involvement 5 – 50%-100%

The null values prior to backfill dates are backfilled based on their latest available data for each of the above screens.

Appendix 5: Index Inception Date and Performance Inception Date

Index Name	Parent Index	Performance Start Date	Inception Date
Morningstar Global Paris Aligned Benchmark Enhanced Index	Morningstar Global Target Market Exposure Index	Dec. 19, 2014	Nov. 27, 2025
Morningstar US Paris Aligned Benchmark Enhanced Index	Morningstar US Target Market Exposur Index	Dec. 19, 2014	Nov. 27, 2025
Morningstar Developed Markets Paris Aligned Benchmark Enhanced Index	Morningstar Developed Markets Target Market Exposure Index	Dec. 19, 2014	Dec. 09, 2025
Morningstar Developed Markets Europe Paris Aligned Benchmark Enhanced Index	Morningstar Developed Europe Target Market Exposure Index	Dec. 19, 2014	Nov. 27, 2025
Morningstar Emerging Markets Paris Aligned Benchmark Enhanced Index	Morningstar Emerging Markets Target Market Exposure Index	Dec. 19, 2014	Dec. 09, 2025
Morningstar Developed Markets ex-US Paris Aligned Benchmark Enhanced Index	Morningstar Developed Markets ex-US Target Market Exposure Index	Dec. 19, 2014	Dec. 09, 2025
Morningstar Global Climate Transition Benchmark Enhanced Index	Morningstar Global Target Market Exposure Index	Dec. 19, 2014	Dec. 09, 2025
Morningstar US Climate Transition Benchmark Enhanced Index	Morningstar US Target Market Exposur Index	Dec. 19, 2014	Dec. 10, 2025
Morningstar Developed Markets Climate Transition Benchmark Enhanced Index	Morningstar Developed Markets Target Market Exposure Index	Dec. 19, 2014	Dec. 10, 2025
Morningstar Developed Markets Europe Climat Transition Benchmark Enhanced Index	Morningstar Developed Europe Target Market Exposure Index	Dec. 19, 2014	Dec. 10, 2025
Morningstar Emerging Markets Climate Transition Benchmark Enhanced Index	Morningstar Emerging Markets Target Market Exposure Index	Dec. 19, 2014	Dec. 10, 2025
Morningstar Developed Markets ex-US Climate Transition Benchmark Enhanced Index	Morningstar Developed Markets ex-US Target Market Exposure Index	Dec. 19, 2014	Dec. 10, 2025

Appendix 6: Climate Impact Sectors

NACE is the European Union's classification of economic activities. According to EU regulations, the NACE sections A, B, C, D, E, F, G, H, and M are deemed high-climate-impact sectors that cannot be underweight relative to their respective weights in the parent index. However, for the Morningstar EU Paris Aligned Benchmark Enhanced Indexes, instead of not underweighting NACE Sections A, B, C, D, E, F, G, H, and M individually, we ensure that the cumulative weight of these NACE sections is not less than 1.01 x their weight in the benchmark. The other sections are left unconstrained as a part of the weighting methodology. Every company in the parent index is mapped to a particular NACE section and further aggregated to form the respective sector constraint cohorts. In the backtest, for companies that had a missing NACE section in their history, the NACE data has been back-propagated as NACE is slow-changing data. Companies for which we did not have a valid NACE section even after back-propagating have been removed from the eligible universe. The references to NACE Sections A, B, C, D, E, F, G, H, and M in this methodology reflect amendments to the NACE classification under Commission Delegated Regulation (EU) 2023/137, under which real estate activities are represented under Section M. Prior to that date, real estate activities were represented under Section L for purposes of the high-climate-impact sector treatment. Historical backtested periods continue to use the NACE section data and classifications applied at the relevant time and are not restated to reflect the reassignment of real estate activities from Section L to Section M. The treatment of missing NACE section data remains unchanged.

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

Appendix 7: Optimization Methodology

Ex-Ante Tracking Error

$$TE = (w_p^T - w_b^T)(X^T F X + \lambda D)(w_p - w_b)$$

Where:

w_p = vector of portfolio weights, unknown

w_b = vector of benchmark weights

X = matrix of asset factor exposures

F= factor covariance matrix

D = specific (idiosyncratic, residual) risk block of covariance matrix

$X^T FX$ = systematic (factor-driven) risk block of covariance matrix from the risk model

λ = 1.5, specific risk aversion parameter; λ=1 results in a specific risk-neutral volatility forecast; λ>1 implies greater penalty for asset-specific risk not modelled by systematic risk factor exposures

Any risk model will miss some systematic sources of risk due to bias-variance trade-off. The model will therefore underestimate the contribution of specific risk to the risk of the overall portfolio, because it assumes the residual risk is perfectly uncorrelated and diversifiable. λ = 1.5 was chosen to compensate for the above effects based on empirical testing of ex-post tracking error.

Handling of Infeasible Optimizations

Constraints will be relaxed if a feasible solution is not obtained. The relaxation happens in the following order:

1. The COC constraint is relaxed up to 7% in increments of 0.1%.
2. The sector constraint is relaxed up to 7% in increments of 0.1% while resetting the COC constraint.
3. The turnover constraint is relaxed to 20% in increments of 1% while resetting the sector and COC constraints.
4. The active buffer for the cumulative high-impact NACE section is relaxed to 0% in increments of 0.1% while resetting the COC, sector, and turnover constraints.

About Morningstar Indexes

Morningstar Indexes was built to keep up with the evolving needs of investors—and to be a leading-edge advocate for them. Our rich heritage as a transparent, investor-focused leader in data and research uniquely equips us to support individuals, institutions, wealth managers, and advisors in navigating investment opportunities across major asset classes, styles, and strategies. From traditional benchmarks and unique IP-driven indexes to index design, calculation, and distribution services, our solutions span an investment landscape as diverse as investors themselves.

Morningstar Index Methodology Committee

The Morningstar Index Methodology Committee oversees all new index development, index methodology changes, and cessation of indexes for any indexes where Morningstar owns the intellectual property. This committee is also charged with ensuring that indexes align with Morningstar Research principles and values. The group comprises members of the index team with index research, product development, product management, client service, index implementation, and operation expertise who provide the first layer of governance over index design and methodology.

Morningstar Index Operations Committee

The Morningstar Index Operations Committee governs the processes, systems, and exception handling of the day-to-day management of all live indexes, including index rebalancing and reconstitution, restatements, market classification, and contingency management. The committee oversees the annual review of index methodology, as required by the European Benchmarks Regulation ("BMR"), ensuring that methodologies remain fit for purpose and continue to achieve their stated investment objectives. The group comprises members of the index team with data, operations, corporate actions, product development, index launch, client service, and index management experience who provide the first layer of governance over index operations.

Morningstar Index Oversight Committee

The Morningstar Index Oversight Committee is responsible for the index oversight function as per the requirements of the European Benchmarks Regulation, or BMR, providing independent oversight of all aspects of the governance of benchmark administration as required by the BMR. Its remit extends to all calculation and administration-related business activities of Morningstar Indexes, including administration of Morningstar-owned benchmarks as well as client-owned benchmarks and index calculation. The oversight function is part of the organizational structure of Morningstar but is separate and independent from the index business, index management, and the other index committees.

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