Morningstar Indexes

# Construction Rules for the Morningstar Transatlantic PAB Select 50 Index

August 2026

## Overview

The Morningstar Transatlantic PAB (Paris Aligned Benchmark) Select 50 Index is designed to achieve minimum standards laid out in the European Union delegated acts. The index supports investors seeking to reduce its exposure to carbon risk and pursue opportunities arising from the transition to a low-carbon economy. The index also seeks to reward companies that have credible carbon-reduction targets while achieving a modest tracking error with respect to the parent index. The index makes use of carbon emissions, product involvement, and ESG controversy data provided by Sustainalytics, a Morningstar company that provides sustainability research. The Index follows the Intergovernmental Panel on Climate Change's (IPCC) '1.5°C with no or limited overshoot temperature scenario. For further information on ESG data used in the Indexes, please see the Morningstar ESG Index Glossary.

### Index Inception and Performance Start Date

The index inception date is February 19, 2025, and the performance start date, when the first back-tested index value was calculated, is December 19, 2014.

# Index Construction

## Methodology Summary

| Index Universe | Eligibility | Index Construction | |
|---|---|---|---|
| • Select all constituents from the Morningstar Developed Markets US and Eurozone Large-Mid 60/40 Index. | • Apply baseline exclusions.<br>• Apply activity-based exclusions<br>• Only primary share classes would be included representing the full company weight. | • Select the top 50 securities based on company float market capitalization with 25 securities being selected from each region*<br>• Apply a region constraint of 60% and 40% of US and Developed Eurozone respectively, where the overall high impact sector cannot be underweight w.r.t. benchmark weight.<br>• An absolute security capping of 10% and floor of 1bps is additionally maintained. | Morningstar Transatlantic PAB Select 50 Index |

*Detailed information on selection of securities is mentioned within Portfolio Selection section

### Starting Universe

At each reconstitution, constituents of the Morningstar Transatlantic PAB Select 50 Index are derived from the Morningstar Developed Markets US and Eurozone Large-Mid 60/40 Index. For more details on benchmark construction, refer to the construction rules for the Morningstar Global Markets Indexes.

### Eligibility

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

Baseline Exclusions

- The company must not have any revenue involvement in controversial weapons, essential or nonessential.
- The company must not be noncompliant with the principles of the United Nations Global Compact.
- The company must not have a null or severe controversy rating (or a level of 5).
- The company must not have any revenue involvement in tobacco production.

Activity-Based Exclusions (Applies Only to Paris-Aligned Indexes)

- The company must not have any revenue involvement in thermal coal extraction and thermal coal related products/services.
- The company must have less than 10% revenue involvement in oil & gas production and oil & gas supporting products/services.

- The company must not have 50% or more of its combined revenue from oil & gas generation and coal power generation.

Only primary share classes allowed representing the full company float market capitalization.

**Portfolio Construction**

*Portfolio Selection*

The selection of the securities is based on the highest company float market capitalization and 25 securities within each region from the above eligible universe in the following manner:

- The climate sector impact groups are divided within high impact and low impact. The target number of securities within individual sectors are calculated as follows:
    - Target number of securities from the high impact sector group = Round Up (Total benchmark weight of securities belonging to the high impact sector group * 50)
- Target number of securities from the low impact sector group = 50 – Number of securities from the high impact sector group

1. The regions are divided within US and Eurozone. The target number of securities within individual regions are calculated as follows:
    - Target number of securities from US high impact sector group = Round Up (Number of securities from the high impact sector group * 0.5)

- Target number of securities from Eurozone high impact sector group = Number of securities from the high impact sector group – Number of securities from US high impact sector group
- Target number of securities from US low impact sector group = minimum(25- Number of securities from US high impact sector group, Round Up (Number of securities from the low impact sector group * 0.5))
- Target number of securities from Eurozone high impact sector group = Number of securities from the low impact sector group – Number of securities from US low impact sector group

*Number of Stocks*

The indexes target a fixed number of stocks (50) based on a transparent ranking system subject to the application of eligibility criteria at reconstitution. However, if fewer than the targeted number of securities from the starting universe meet eligibility criteria, or if securities are added or deleted as a result of corporate actions after reconstitution, the constituent count may deviate from the targeted number. During reconstitution, if the number of eligible securities is less than the targeted constituent count, all eligible securities are selected. The reconstitution schedule is provided in the "Index Maintenance and Calculation" section.

*Index Weighting*

At each semiannual review, the indexes are constructed using a tilt-weighting methodology that aims to achieve replicability and investability while keeping the tracking error with respect to the parent index low subject to the following condition and constraints. For more details, refer to the Morningstar Indexes Calculation Methodology rulebook.

| Parameter | PAB |
|---|---|
| Minimum reduction in greenhouse gas intensity (scope 1 + 2 +3) relative to region/country specific parent index | 50% |
| Minimum average reduction (per year) in greenhouse gas intensity relative to the greenhouse gas intensity of the PAB portfolio at the base date | 7% |
| Sector Constraint | Cumulative weight of the High Impact sectors should not be less than 1.05x their weight in the benchmark |
| Region Constraint | US should be 60% and Eurozone should be 40% by weight |
| Minimum constituent weight | Maximum (1% of weight in parent benchmark, 1bps) |
| Maximum constituent weight | Minimum (weight in parent benchmark + 5%, 20x weight in parent benchmark, 10%). |

The objectives are achieved by using a tilt-weighting approach as mentioned below.

$$W_{PORT} = W_P * SCI^{\alpha} * F_{RC} * F_{SC} * F_{CP}$$

- $W_{PORT}$ : Weight of the security in the PAB Index
- $W_P$: Weight of the security in the parent index
- SCI: Carbon Intensity Standard Score (refer to Step1 of process below)
- $F_{RC}$ : Region constraint control factor
- $F_{SC}$ : Sector constraint control factor
- $F_{CP}$ : Security constraint control (refer to the parameter table above)
- $\alpha$: Exponential tilt powers determined at each index rebalance to achieve the design objectives. The power has a sensitivity of 0.01.

The Process

Step 1: The carbon intensity standard scores are determined by first calculating the respective Z scores over the entire universe and then using a cumulative distribution function to determine the S scores. To reflect the inverse correlation of carbon intensity with portfolio weights, the S scores are changed to 1 – S scores.

Step 2: The parent index weights are tilted by the carbon intensity S score, subject to the exponential power $\alpha$. The $\alpha$ is set to 0.01 for the first iteration.

Step 3: Calculate the tilt weight for all securities

Step 4: The region tilt factors are applied to achieve the region constraints.

Step 5: Within each region, the sector tilt factors are applied to achieve the sector constraints.

Step 6: The individual security capping of 10% and floor of 1bps is applied without distorting the region and sector constraints.

At the end of Step 6, we check whether all constraints are being satisfied or not. If they are not, then we move on to the next iteration, increase the $\alpha$ by 0.01 and repeat steps 4 to 6.

## Index Maintenance and Calculation

### Reconstitution and Rebalancing

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 May and November.

The index is rebalanced quarterly and implemented after the close of business on the third Friday of March, June, September, and December and is effective the following Monday. If Monday is a holiday, rebalance is effective on the next business day. The market data used for rebalancing is as of the last trading day of February, May, August, and November. During quarterly reviews, parent index eligibility is maintained and securities with a null or severe (level of 5) controversy rating are deleted from the index. The absolute security capping at 10% and floor of 1bps is additionally maintained. Additionally, the region constraint capping of 60% for US and 40% for Eurozone is 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 float-adjusted market capitalization-weighted indexes corporate action methodology. For more details, please refer to the Morningstar Indexes Corporate Actions Methodology.

### Index Calculation and Price Data

Details about index calculations and price data can be found in their respective rulebooks: Morningstar 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 Indexes 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, geo-political events, and regulatory changes. In addition, factors such as low usage or methodology convergence may result in the cessation of an index.

Because the cessation of the index or benchmark index could disrupt subscriber products that reference this index, all subscribers are encouraged to have robust fallback procedures if an index is terminated. 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 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: Glossary

| Terms | 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. |

### Appendix 2: Calculation of Target Metrics

**Calculation of Carbon, or Greenhouse Gas, Intensity**

The total emission of a security is defined as the sum of the scope 1, scope 2, and scope 3 emissions. Enterprise value including cash 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 Large Mid Index in the same NACE section in which the constituent belongs is used. A valid carbon intensity value can only be calculated if both the emissions and EVIC values are available for the company.

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

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

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

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

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

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

*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 1.05x 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 base date is used to compute the target weighted average greenhouse gas intensity at any given semiannual index review, according to the following formula.

$CI_T = CI_0 * (0.93)^{(t-1/2)}$

The base date is set at June 19, 2023. $CI_0$ is the achieved carbon intensity of the portfolio base date and t is the number of semiannual index reviews since the base date.

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

The carbon trajectory has been reset on June 21, 2021 and June 19, 2023 in the entire backtest. The EVIAF factor has been reset on June 21, 2021.

| **Index Name** | **Base Date** | **Benchmark intensity (MT $CO_2$/Mn USD EVIC))** | **Portfolio intensity (MT $CO_2$/Mn USD (EVIC))** |
|---|---|---|---|
| Morningstar Developed Markets US and Eurozone Large-Mid 60/40 Index | June 19, 2023 | 535.9 | 124.8 |

## Appendix 3: ESG Screens

| Category | Name | Backfill Date* | Missing data Treatment # | Reason for Exclusion |
|---|---|---|---|---|
| Controversy | Highest Controversy Level | - | Exclude | 5 |
| UNGC | UNGC Compliance Status | - | Include before Dec 19, Exclude from Dec 19 | Non-compliant |
| Controversial Weapons | Controversial Weapons Tailor Made & Essential – Category Level of Involvement | - | Include before Dec 19, Exclude from Dec 19 | CW1 |
| | Controversial Weapons Non Tailor Made & Nonessential – Category Level of Involvement | - | Include before Dec 19, Exclude from Dec 19 | CW3 |
| Tobacco | Tobacco Products (Production) – Level of Involvement | Dec 19 | Include before Dec 19, Exclude from Dec 19 | Greater than 0 |
| Thermal Coal | Thermal Coal (Extraction) – Level of Involvement | Dec 19 | Include before Dec 19, Exclude from Dec 19 | Greater than 0 |

| | | | | |
|---|---|---|---|---|
| | Thermal Coal (Supporting Products & Services) – Level of Involvement | Mar 22 | Include before Mar 22, Exclude from Mar 22 | Greater than 0 |
| Oil & Gas | Oil & Gas (Production) – Level of Involvement | Dec 19 | Include before Dec 19, Exclude from Dec 19 | Greater than 10% |
| | Oil & Gas (Supporting Products & Services) – Level of Involvement | Dec 19 | Include before Dec 19, Exclude from Dec 19 | Greater than 10% |
| Total Power Generation | Thermal Coal Power Generation Revenue – Absolute Revenue Percentage | Dec 20 | Include before Dec 22, Exclude from Dec 22 | Combined sum is greater than equal to 50% |
| | Oil & Gas Power Generation Revenue – Absolute Revenue Percentage | Mar 21 | Include before Dec 22, Exclude from Dec 22 | |

* The missing data prior to the backfill date have been backfilled based on the earliest data available.
# Missing data treatment is applied after the data backfill process is completed.

### Appendix 4: Climate Impact Sectors

NACE is the European Union's classification of economic activities. According to EU regulation, 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 Transatlantic PAB Select 50 Index, 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 1.05x their weight in the benchmark. The other sections are left unconstrained as a part of the tilt 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 a 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, please refer to https://ec.europa.eu/eurostat/statistics-explained/index.php?title=NACE_background.

### Appendix 5: Index Treatment in Case of Inability to Meet Required Decarbonization Target

In the off chance that the Index is unable to achieve the target decarbonization in a particular year, then we will relax the active sector constraint from being 5% of the benchmark weight for the High Impact NACE sections to 0%. If we still are unable to meet the requirement, security floor of 1bps will be relaxed instead. If we are still unable to meet the requirement, the security capping of 10% will be relaxed, and we will switch to an approach that will achieve the required decarbonization trajectory. This is in compliance with the EU Regulations, and we have implemented a stricter approach in our methodology.

## Appendix 6: Morningstar® Transatlantic PAB Select 50 Decrement Indexes

| Index Name | Underlying Index | Base value | Base Date | Performance Inception Date | Inception Date |
|---|---|---|---|---|---|
| Morningstar® Transatlantic PAB Select 50 Decrement 50 Point GR | Morningstar® Transatlantic PAB Select 50 GR | 1000 | Feb. 11, 2025 | Dec. 19, 2014 | Feb. 19, 2025 |
| Morningstar® Transatlantic PAB Select 50 Decrement 5% NR | Morningstar® Transatlantic PAB Select 50 NR | 1000 | Dec. 19 2014 | Dec. 19 2014 | Feb. 19, 2025 |

## Appendix 7: Decrement Levels

The index levels are adjusted by deducting a predetermined value of index points from the gross return, or GR, or fixed percentage point from the net return, or NR, levels of the base index. These constant markdowns are applied to the base index daily.

| Return Variant of the Base Index | Base Currency | Decrement Type | Decrement Frequency | Decrement Application | Decrement Value | Day Count Conventio n |
|---|---|---|---|---|---|---|
| Net Total Return Gross Total Return | EUR | Fixed Percentage Decrement or Fixed Point Decrement based on the index version. | Daily | Geometric application for both decrement types. | 5% decrement based on the Net Total Return 50-point decrement based on Gross Total Return | *ACT/365 |

*ACT is the number of calendar days between two calculation days.

**Formula for Fixed Point Decrement**

**Geometric Decrement Calculation**

$$IV_t = (IV_{t-1} \times (U_t \div U_{t-1})) - (D \times (Act(t-1,t) \div DayCount))$$

*Where:*

$IV_t$ = *The value of the Fixed Point Decrement Index for calculation day t*

$IV_{t-1}$ = *The value of the Fixed Point Decrement Index for day t-1*
$U_t$ = *The value of the base Index for calculation day t*
$U_{t-1}$ = *The value of the base Index for calculation day t-1*

*Act(t-1,t) = Number of calendar days between calculation day t-1 and calculation day t*
*D = The Decrement value expressed in Index points*
*DayCount = Set to 365*

**Formula for Fixed Percentage Decrement**

**Geometric Decrement Calculation**

$$IV_t = IV_{t-1} \times ((U_t \div U_{t-1}) - (c \times (Act(t-1,t) \div DayCount))$$

*Where:*

$IV_t$ = *The value of the Fixed Percentage Decrement Index for calculation day t*

$IV_{t-1}$ = *The value of the Fixed Percentage Decrement Index for day t-1*
*Ut = The value of the base Index for calculation day t*
*Ut-1 = The value of the base Index for calculation day t-1*
*Act(t-1,t) = Number of calendar days between calculation day t-1 and calculation day t*
*c = The Decrement value expressed in Fixed Percentage*
*DayCount = Set to 365*

## Appendix 8: Modifications to the Rulebook

| Section | Description of Change | Update Date |
|---|---|---|
| Appendix 4: 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 |

## 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 U.K. and EU benchmark regulations, or 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 U.K. and European BMR, providing independent oversight of all aspects of the governance of benchmark administration as required by the relevant 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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## Contact Us

indexes@morningstar.com