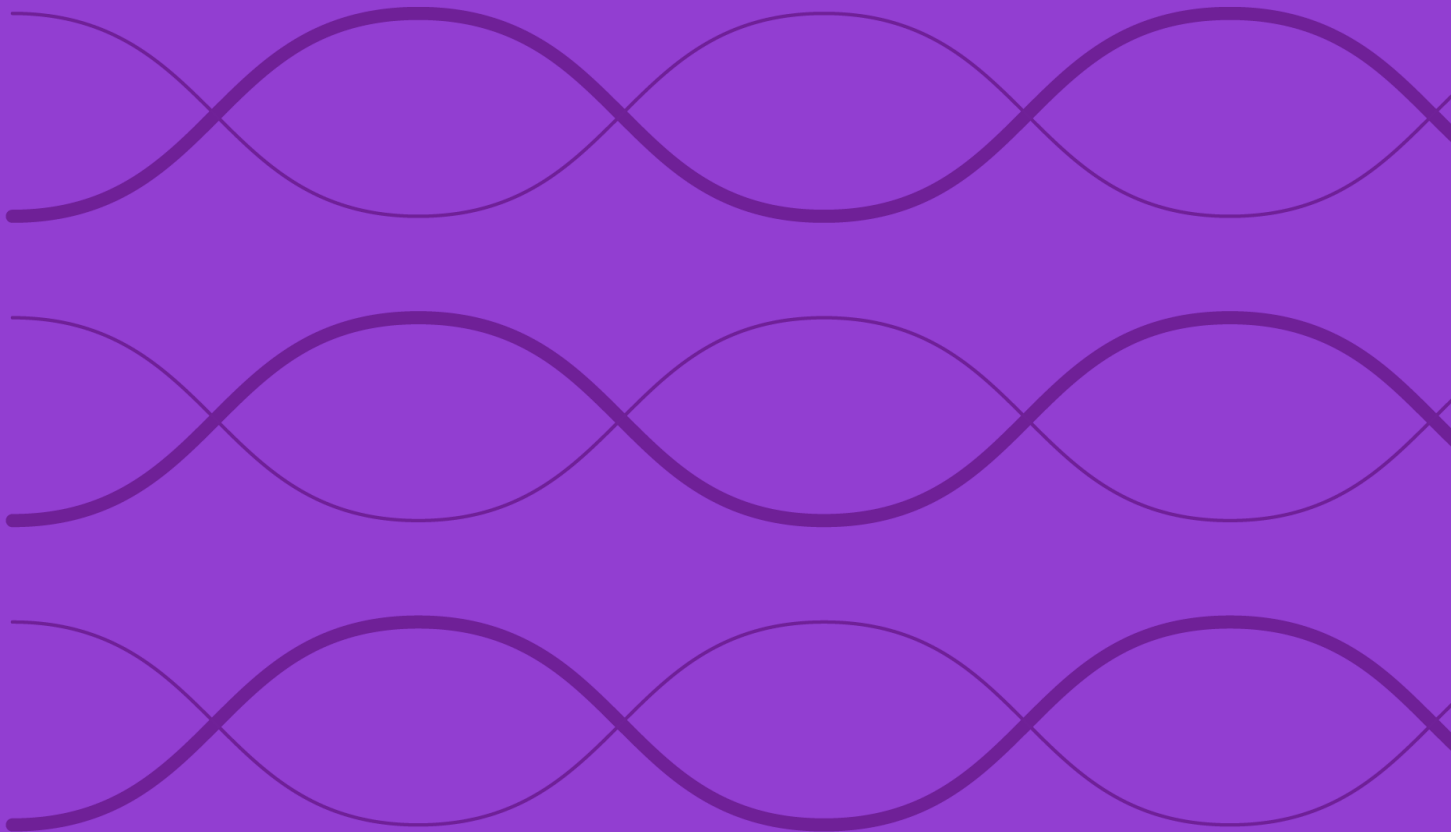


Construction Rules for the Morningstar France Paris Aligned Benchmark Sustainability 40 Index



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Overview

The Morningstar France Paris Aligned Benchmark Sustainability 40 Index is designed to achieve the Paris Aligned Benchmarks standards laid out in the European Union delegated acts and to reduce the exposure to both carbon risk and severe ESG companies and pursue opportunities arising from the transition to a low-carbon economy. The index also seeks to achieve a minimal tracking error with respect to the parent benchmark while aiming to reduce its ESG Risk Score against the benchmark. The index makes use of Carbon Emissions, ESG Risk Rating, Products Involvement and ESG Controversy data provided by Sustainalytics. For further information on ESG data used in the index, please see the [Morningstar ESG Index Glossary](#).

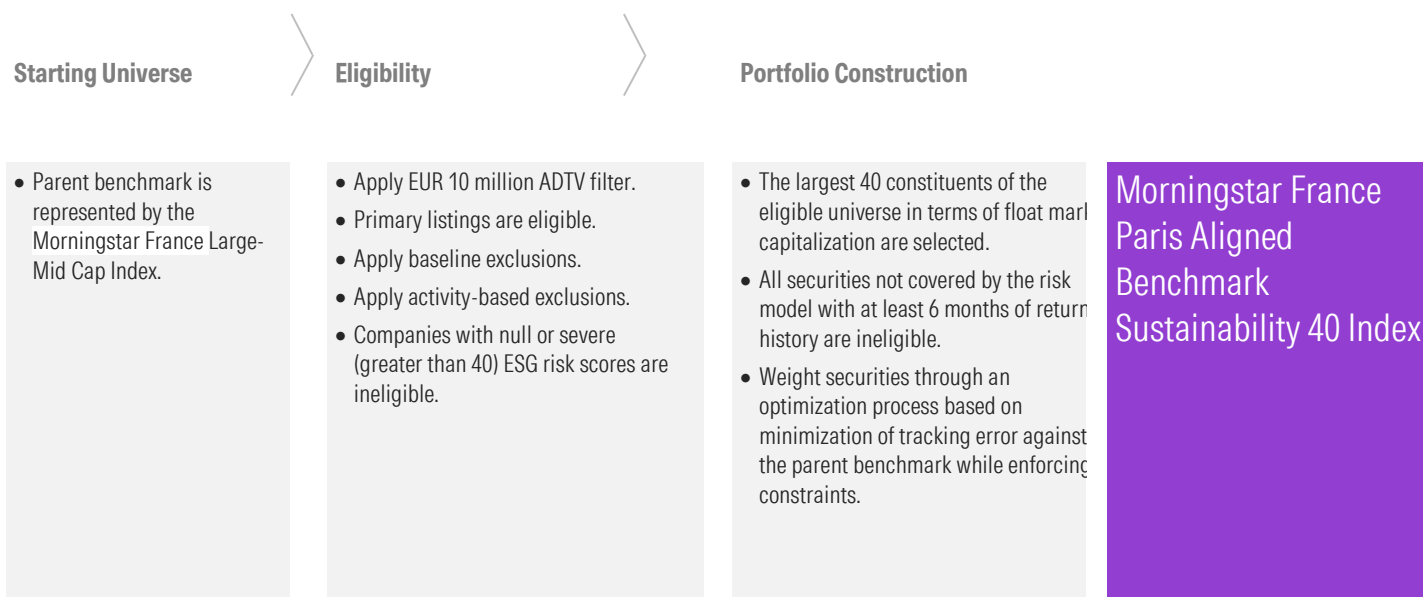
The index is powered by the Morningstar Global Industry Standard Risk Model (the risk model), which is used to forecast volatility of the entire portfolio and its benchmark. Return volatility is relative to the currency of measurement. The index design followed the assumption that investors are interested in reducing the volatility of their investments in the primary currency of exposure of their liabilities and expenses. For more information on the risk model, refer to Morningstar Risk Model Methodology.

Index Inception and Performance Start Date

The index inception date is February 27, 2024, and the performance start date, when the first back-tested index value was calculated, is June 19, 2015.

Index Construction

Methodology Summary



For additional details, refer to the following section.

Starting Universe

At each reconstitution, securities for the Morningstar France PAB Sustainability 40 Index are derived from the Morningstar Global Markets Large-Mid Cap Index with the relevant country filter (France), the benchmark. For more details on benchmark construction, refer to the Construction rules for the [Morningstar Global Markets Index](#).

Eligibility

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

- Securities must not have a 3-month ADTV less than EUR 10 million.
- Securities must be primary listings.
- Companies must not have a null or severe (greater than 40) ESG risk scores.
- Baseline Exclusions
 - The company must not have a severe controversy rating (or a level of 5).
 - The company must not be non-compliant with the principles of the United Nations Global Compact.
 - The company must not have any revenue involvement or greater than 50% significant ownership in controversial weapons, essential or nonessential.
 - The company must not have any revenue involvement or greater than 50% significant ownership in riot control, weapons, protection equipment or weapons & protection equipment.
- Activity-Based Exclusions
 - The company must not have any revenue involvement in the following activities:

- Arctic Oil & Gas (Exploration & Extraction)
- Oil Sands Extraction
- Shale Energy Extraction
- Thermal Coal (Extraction and Supporting Products/Services, Power Generation)
- Tobacco Products (Production)
- The company must not have greater than or equal to 10% revenue involvement in the following activities:
 - Oil & Gas (Production & Supporting Products/Services)
- The company must not have 50% or more combined revenue from oil & gas generation and coal power generation.
- The company must not have greater than or equal to 50% significant ownership revenue involvement in the following activities:
 - Oil & Gas 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

Out of the remaining eligible universe, post the application of the abovementioned screens, the 40 largest stocks are selected in terms of float market capitalization. The selection number of securities from High and Low Impact sectors¹, as defined by the NACE classification system, is proportional to the sectors' aggregate free float market capitalization in the parent benchmark. Securities not covered by the Morningstar Global Industry Standard Risk Model are excluded from the final portfolio.

Number of Stocks

While the methodology is targeting for a fixed number of securities, the number of stocks in the index might be variable, subject to the selection and eligibility criteria at the time of reconstitution.

Optimization Parameters

At each semi-annual reconstitution the Morningstar France Paris Aligned Sustainability 40 Index portfolio is created using an optimizer to minimize the objective and meet the constraints as follows:

- Minimize the forecasted tracking error of the portfolio against its benchmark².
- No short positions are allowed.
- The maximum weight of a security should be less than or equal to 5%.
- The minimum weight of a security should be greater than or equal to 0.5%³.
- The minimum High Impact sector aggregate weight of the index should be greater than or equal to 105% of the High Impact sector aggregate weight of the benchmark. In the case of infeasibility, the constraint is relaxed in increments of 0.5%, up to the limit of 100%, until a solution is reached.

- The maximum one-way turnover should be less than or equal to 15%. In the case of infeasibility, the constraint is relaxed in increments of 1.0%, up to the limit of 30%, until a solution is reached.
- The maximum average weighted ESG Risk Score of the index should be less than or equal to 80% of the average weighted ESG Risk Score of the benchmark. In the case of infeasibility, the constraint is relaxed in increments of 1.0%, up to the limit of 100%, until a solution is reached.
- The Weighted Average Carbon I⁴ of the index must be less than or equal to the minimum of the following:
 - 50% of the Weighted Average Carbon Intensity of the benchmark (Relative Decarbonization Threshold).
 - 7% annual geometric average reduction in the index's Weighted Average Carbon Intensity from the decarbonization trajectory base date(s) (Absolute Decarbonization Trajectory).

Index Weighting

The weights of index constituents are determined through an optimization process subject to the objective function and weight constraints described in the "Optimization Parameters" section above. Appendix 5 contains further details.

¹ For more details on NACE Impact Sectors please refer to Appendix 6

² For more details on the objective function and optimization process please refer to Appendix 5

³ For more details on the implementation of minimum weight constraint, please refer to Appendix 5.

⁴ For more details on the weighted average carbon intensity and decarbonization trajectory please refer to Appendix 3

Index Maintenance and Calculation

Scheduled Maintenance

Semiannual Reconstitution (June and December)

The index is reconstituted, where the membership is reset, semi-annually. Adjustments are made on the Monday following the third Friday of June and December. If the Monday is a holiday, reconstitution occurs on the next business day. The market, EVIC, NACE and ESG (including emissions, product involvement and Sustainability Activities Involvement) data used for reconstitution is as of the last trading day of May and November.

Quarterly Rebalance

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.

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 market capitalization weighted indexes. For more details, please refer to the [Morningstar Indexes Corporate Actions Methodology rulebook](#).

Index Calculation and Price Data

Details about index calculations and price data can be found in their respective rulebooks: [Morningstar Indexes Calculation Methodology](#) and [Equity Closing Prices Used for Index Calculation](#).

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, selection, 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, 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 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 methodology as described within this document, 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 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: Index Variants and Inception Dates

Index Name	Risk Model Currency	Parent Index	Performance Start Date	Inception Date
Morningstar France Paris Aligned Benchmark Sustainability 40 Index	EUR	Morningstar France Large-Mid Cap Index	June 19, 2015	February 27, 2024,

Appendix 3: Calculation of Target Metrics

Calculation of Carbon, or Greenhouse Gas, Intensity

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.

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

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

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

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

$$\text{Enterprise Value Including Cash (EVIC)} = (\text{MktCap}_{\text{Ordinary Shares}} + \text{MktCap}_{\text{Preferred Shares}} + \text{BV}_{\text{Debt}} + \text{NCI})$$

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

*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 to the previous reconstitution. In case of a decrease, the EVIAF is set to 1.

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.

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

$$CI_T = CI_0 * (0.93)^{(t)}$$

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

We also aim to achieve a min 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 France PAB Sustainability 40 Index	June 19, 2023	978	489

Appendix 4: Baseline & Activity Based Exclusions

Detailed Criteria	Backfill Date	Missing Data Treatment	Threshold for exclusion
Product Revenue Involvement Screens			
Highest Controversy Level	-	Exclude	5
UNGC Compliance Status	-	Include before Dec 19, exclude from Dec 19	Non-compliant

Controversial Weapons Tailor Made & Essential	-	Include before Dec 19, exclude from Dec 19	Any involvement
Controversial Weapons Non-Tailor Made or Nonessential	-	Include before Dec 19, exclude from Dec 19	Any involvement
Arctic Oil & Gas (Exploration & Extraction)	Dec 19	Include if < Backfill Date Exclude if >= Backfill Date	Any Involvement
Oil & Gas (Generation)	Dec 19	Exclude	Greater than 50%
Oil & Gas (Production)	Dec 19	Exclude	Greater than 10%
Oil & Gas (Supporting Products & Services)	Dec 19	Exclude	Greater than 10%
Oil Sands (Extraction)	Dec 19	Exclude	Any Involvement
Shale Energy (Extraction)	Dec 19	Exclude	Any Involvement
Thermal Coal (Extraction)	Dec 19	Exclude	Any Involvement
Thermal Coal (Power Generation)	Dec 19	Exclude	Any Involvement
Thermal Coal (Supporting Products/Services)	Mar 22	Exclude	Any Involvement
Tobacco Products (Production)	Dec 19	Exclude	Any involvement
Thermal Coal Power Generation Revenue	Dec 20	Include	a%*
Oil & Gas Power Generation Revenue	Mar 21	Include	b%*

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

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

Appendix 5: Optimization Methodology

Objective Function

$$\text{minimize } (W_b - W_p)^T (X^T F X + \lambda D) (W_b - W_p)$$

W_p	=	vector of portfolio weights
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
$X^T F X$	=	systematic (factor-driven) risk block of covariance matrix from the risk model
λ	=	10, 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	=	10 was chosen to compensate for the above effects based on empirical testing of ex-ante minimized risk. Higher specific risk aversion also tends to encourage higher portfolio diversification, which was a desired outcome.

Handling of Infeasible Optimizations

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

- High Impact sector minimum active weight constraint is reduced from +5% to 0% in increments of 0.5%
- One-way turnover constraint is increased from the target of 15% to 30% in increments of 1.00%

- ESG Risk Score minimum active weighted average reduction against the benchmark is decreased from 20% to 0% in increments of 1.00%.

Minimum Weight Constraint Implementation

Unlike the other constraints and objective of the index, minimum weight constraint is non-convex due to its binary decision nature (each of eligible securities can either have weight greater than minimum threshold of 0.05%, or zero weight). To satisfy the constraint in an efficient manner for parent benchmarks with thousands of eligible stocks, the following two-pass heuristic approach is employed. Securities are excluded from the portfolio if they receive weights below the minimum weight threshold in the first optimization pass. The weights of the remaining securities are re-adjusted to meet the constraints by a second pass of optimization, where a zero weight (exclusion) constraint is added for the excluded securities, and strict minimum weight constraint of 0.05% is added for each of the remaining holdings.

Appendix 6: 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 France Paris Aligned Benchmark Sustainability 40 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 7: 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, the Turnover and ESG Risk Reduction constraints will be relaxed as well.

Appendix 8: Decrement Indexes

Index Name	Underlying Index	Base value	Base Date	Performance Inception Date	Inception Date
Morningstar France Paris Aligned Benchmark Sustainability 40 5% Decrement NR	Morningstar France Paris Aligned Benchmark Sustainability 40 NR	1000	Jun. 22, 2015	Jun. 22, 2015	Feb. 27, 2024

Appendix 9: 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 Convention
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	=	$(IV_{t-1} \times (U_t \div U_{t-1})) - (D \times (\text{Act}(t-1, t) \div \text{DayCount}))$
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
$\text{Act}(t-1, t)$	=	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	=	$IV_{t-1} \times ((U_t \div U_{t-1}) - (c \times (Act(t-1,t) \div DayCount)))$
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
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
c	=	The Decrement value expressed in Fixed Percentage
$DayCount$	=	Set to 365

Appendix 10: Modifications to the Rulebook

Section	Description of Change	Update Date
Corporate Action	Transitioned Indexes to the standard Morningstar Corporate Action Methodology	July 2024
Calculation of Carbon, or Greenhouse Gas, Intensity	Clarified exceptions handling language	January 2026
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

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 (“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.

www.indexes.morningstar.com

Contact Us

indexes@morningstar.com

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