

Bloomberg MSCI Euro Corporate SRI Sustainable Select Ex Fossil Fuel PAB Index

The Bloomberg MSCI Euro Corporate SRI Sustainable Select Ex Fossil Fuel Bond PAB Index is a fixed-rate, investment-grade corporate bond benchmark that follows the rules of the Bloomberg Euro Aggregate Corporate Index and applies additional sector and ESG criteria for security eligibility. In addition, the index is designed to meet the standards of the EU Paris Aligned Benchmark (PAB) Label. The index sets an initial minimum 50% reduction of absolute GHG emissions relative to the Bloomberg Euro Aggregate Corporate Index, followed by an annual 10% decarbonisation relative to the baseline emissions. The index uses an exclusions-based approach to achieve the decarbonisation trajectory, based on criteria on both emission intensities and absolute emissions by issuer.

The Bloomberg MSCI Euro Corporate SRI Sustainable Select Ex Fossil Fuel PAB Index is based on the existing Bloomberg MSCI Euro Corporate SRI Sustainable Ex Fossil Fuel Index. The initial 50% (or larger) de-carbonization is performed according to the rules specified in this factsheet on July 2022 month-end. Afterwards, the emissions rebalancing to maintain a 10% (or better) de-carbonisation trajectory will be performed annually, on each July month-end. From August 2022, the PAB-aligned index also includes a 3% issuer cap and is sector neutral to the Bloomberg Euro Aggregate Corporate Index.

The index includes issuers with MSCI ESG Ratings of BBB or higher and negatively screens issuers that are involved in business activities that are restricted because they are inconsistent with certain values-based business involvement criteria, including activities related to controversial military weapons, and those issuers with a "red" MSCI ESG Controversy Score are excluded. From February 2021, the index excludes issuers with any Fossil Fuel ties. Additionally, bonds must have at least EUR500mn par amount outstanding (starting from May 1, 2021). Prior to May 2021, bonds must have at least EUR800mn par amount outstanding to be eligible.

The index was created in September 2018, with history backfilled to January 1, 2013. The transition of the index to a Paris-Aligned benchmark was effective as of July 31, 2022. The PAB index supersedes the existing index and maintains the same Bloomberg Index Ticker (I34235EU).

Rules for Inclusion: Fixed Income Criteria

Sector	Corporate (industrial, utility and financial institutions) issuers only.
Eligible Currencies	Principal and interest must be denominated in EUR.
Quality	<p>Securities must be rated investment grade (Baa3/BBB-/BBB- or higher) using the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. In cases where explicit bond level ratings may not be available, other sources may be used to classify securities by credit quality:</p> <ul style="list-style-type: none"> Expected ratings at issuance may be used to ensure timely index inclusion or to properly classify split-rated issuers. Unrated securities may use an issuer rating for index classification purposes if available. Unrated subordinated securities are included if a subordinated issuer rating is available.
Amount Outstanding	<ul style="list-style-type: none"> From May 1, 2021 and onwards: EUR500mn minimum par amount outstanding. Prior to May 1, 2021: EUR800mn minimum par amount outstanding.
Coupon	<ul style="list-style-type: none"> Fixed-rate coupon.

	<ul style="list-style-type: none"> • Original zero coupon issues are included. • Callable fixed-to-floating rate bonds are eligible during their fixed-rate term only. • Step-up coupons and those that change according to a predetermined schedule are also eligible. 	
Maturity	<ul style="list-style-type: none"> • At least one year until final maturity, regardless of optionality. • Bonds that convert from fixed to floating rate, including fixed-to-float perpetual, will exit the index prior to conversion to floating-rate. Fixed-rate perpetual bonds are not included. 	
Issue Date	Eligible bonds must have been issued within the past five years.	
Market of Issue	Fully taxable, publicly issued in the global and regional markets.	
Seniority of Debt	Senior and subordinated issues are included.	
Security Types	Included <ul style="list-style-type: none"> • Bullet, putable, sinkable/amortizing and callable bonds • Fixed-rate and fixed-to-floating capital securities 	Excluded <ul style="list-style-type: none"> • Treasury, government related and securitized bonds • Floating-rate bonds, inflation-linked bonds • Private placements and retail bonds

Environment, Social and Governance (ESG) Rules

MSCI ESG Rating	<ul style="list-style-type: none"> • Securities must have an MSCI ESG Rating of BBB or higher. • Unrated issuers from sectors with ratings are excluded. • Ratings are applied at the ticker level. Every bond within the same ticker will have the same MSCI ESG Rating. • MSCI ESG Ratings are generally updated annually, but may be reviewed more frequently as needed.
Business Involvement Screens	<p>The index excludes issuers involved in the following business lines/activities as per the standard Bloomberg MSCI SRI screen:</p> <ul style="list-style-type: none"> • Alcohol • Tobacco • Gambling • Adult Entertainment • Genetically Modified organisms (GMO) • Nuclear Power • Civilian Firearms • Conventional Weapons • Nuclear Weapons • Controversial Weapons

- o Landmine Manufacturing
 - o Cluster Bomb Manufacturing
 - o Depleted Uranium Weapons
 - o Chemical and Biological Weapons Components
- Thermal Coal
- Fossil Fuels

Involvement is defined for each restricted activity and may be based on % of revenue, total revenue, or any tie regardless of revenue (see Figures 7-8 on pages 14-16 for standard screen threshold in [ESG Methodology](#)).

In addition, starting from February 2021, the index excludes issuers involved in the following business lines/activities:

- Tobacco – companies with any tie to Tobacco are excluded
- Genetically Modified organisms (GMO) – companies with any ties to GMO are excluded
- Nuclear Power – companies with any tie to Nuclear Power are excluded
- Civilian Firearms – companies with any ties to Civilian Firearms are excluded
- Military Weapons – companies with any ties to Military Weapons are excluded, and also any ties to:
 - o Landmine Manufacturing – all companies classified as Manufacturer of Landmines are excluded
 - o Cluster Bomb Manufacturing – all companies classified as Manufacturer of Cluster Bombs are excluded
- Fossil Fuels – companies with any ties to Fossil Fuels are excluded.

Prior to February 2021, the index excluded issuers involved in the following business lines/activities as per the standard Bloomberg MSCI SRI screen:

- Alcohol
- Tobacco
- Gambling
- Adult Entertainment
- Genetically Modified organisms (GMO)
- Nuclear Power
- Civilian Firearms
- Military Weapons
 - o Landmine Manufacturing
 - o Cluster Bomb Manufacturing
 - o Depleted Uranium Weapons
 - o Chemical and Biological Weapons Components

- Prior to February 2021, the index also excluded Bloomberg Class 4 sectors: Independent Energy, Integrated Energy, Metals and Mining, Electric and Natural Gas. Issuers within these Bloomberg sectors have been identified to have a high concentration to issuers identified as having involvement in fossil fuel extraction or ownership of fossil fuel reserves under MSCI ESG Carbon Metrics, as assessed in June 2018.

MSCI ESG Controversy Score

Excludes any issuer with a "Red" MSCI ESG Controversy score (equal to zero), which measures an issuer's involvement in major ESG controversies and how well they adhere to international norms and principles.

Emissions and Exclusions Rules related to the Paris-Aligned Benchmark Label

MSCI Absolute GHG Emissions

The index excludes bonds where MSCI does not have reported or estimated Scope 1, 2 and 3 absolute GHG emissions data.

The index excludes bonds where MSCI does not have reported or estimated Emissions Intensity (Scope 1, 2 and 3), relative to Sales or EVIC (in other words, bonds need at least one intensity measure to be potentially included in the Index).

MSCI Business Involvement Screens

Following the Paris-Aligned Benchmark exclusion rules, as specified in the Delegated Acts, the following business lines and activities are excluded from the index:

- Controversial Weapons
 - Cluster Munitions
 - Landmines
 - Depleted Uranium
 - Biological/ Chemical Weapons
 - Blinding Lasers
 - Non-Detectable Fragments
 - Incendiary
- Tobacco Producers
- UNGC Violations
- Environment Controversy Score of 0 or 1
- Thermal Coal revenue $\geq 1\%$
- Oil & Gas revenue $\geq 10\%$
- Power Generation revenue $\geq 50\%$

We remark that the exclusions derived from the PAB Label and the ESG and Fossil Fuel exclusions overlap to a large extent.

PAB-Related Annual Emissions Exclusions Process

The Annual Exclusions process is run 5 business days before the corresponding month end. The process will establish the set of issuers/bonds to be excluded in order to maintain compliance with the PAB Label Decarbonisation Trajectory.

Overview

- Total emissions are calculated for every eligible bond by adding the Scope 1&2 and Scope 3 emissions.
- The sum of weighted total emissions is calculated for the parent index (bonds with no emissions have zero weight).
- The emissions target is calculated as the lower of the decarbonisation trajectory or 50% of parent emissions.
- The PAB decarbonization trajectory is defined as an **initial reduction** of total index emissions of 50% or more relative the parent index (Bloomberg Euro Aggregate Corporate Index), followed by a minimum annual 10% reduction in total index emissions relative to the PAB index itself. We remark that the initial reduction may be larger than 50%, but that does change the regulatory requirement for the index to subsequently decarbonize by 7% or more in annual terms.
- The exact reference index for the computation of emissions in the initial decarbonization is the Bloomberg Euro Aggregate Corporate Index, including only the bonds with Scope 1, 2 and 3 total emissions data, a minimum par amount outstanding of EUR500mm, and having been issued in the last 5 years.

Intensity-based Exclusion Algorithm

- At the annual rebalancing date, the maximum total index emissions level (market-value weighted) is computed, in accordance with the PAB-specified decarbonization trajectory. The target reduction for the decarbonization trajectory will be 10% per annum, beyond the minimum 7.0% prescribed in the Delegated Acts.
- All ESG and PAB-specific exclusions are applied to the parent index; the 3% issuer cap and the sector neutrality vs. the parent index are applied. The interim-PAB index emissions are computed.
- If the interim-PAB index emissions are below the required maximum index emissions, the interim index becomes the final PAB index and the process stops here.
- If the interim-PAB index emissions are above the required maximum index emissions, the following algorithm is applied:

Step 1: The interim-PAB index is bucketed into 3 broad sectors:

Financials: BCLASS3 Banking, Asset Managers-Brokerages-Exchanges, Insurance

Other Financials: BCLASS3 REITs, Finance Companies, Other Financials

Non-Financials: BCLASS2 Industrials and Utilities

For each sector, we rank issuers with data on Intensity by Sales but with no data for Intensity by EVIC (roughly corresponding to private companies). The ranking is by Intensity by Sales, creating 4 quartiles. We will exclude all issuers in the lowest quartile by Intensity by Sales (highest intensities) with Total Emissions above the arithmetic mean of total emissions for the sector.

The resulting index will be reweighted according to the sector neutrality rule, and the 3% issuer cap applied. If the resulting index emissions are below the required level, the process stops here. Otherwise, we move to Step 2.

Step 2: Within each broad sector, the issuers with data on intensity by EVIC are ranked and 4 Quartiles are formed. We remove one issuer from each sector using the following procedure. Beginning with the lowest quartile (highest intensity), we remove the issuer with the highest total emissions if and only if its total emissions are above the arithmetic mean total emission for the sector. If there is no such issuer, we move to the third, then second, then first quartile until one company per sector is excluded.

The resulting index will be reweighted according to the sector neutrality rule, and the 3% issuer cap applied. If the resulting index emissions are below the required level, the process stops here. Otherwise, we iterate Step 2 until the necessary reduction in total emissions is achieved.

Monthly Rebalancing Rules

Sector Neutral Reweighting

The application of screens based on MSCI ESG Ratings, MSCI ESG Controversies, and MSCI ESG Business Involvement Screening Research (BISR) will alter the sector composition of the index versus the standard Euro Aggregate Corporate Index. The index's sector weights are therefore adjusted to match the market value weights of three sector buckets of the standard Euro Aggregate Corporate Index. The sector buckets are:

- Banking + Asset Managers-Brokerages-Exchanges + Insurance
- REITs + Finance Companies + Other Financials
- Industrials + Utilities

These sector weights are fixed as of month end, and may drift intra-month as prices change and bonds are called or tendered.

Issuer Capping Methodology

Issuers that exceed 3% of the market value of the uncapped Euro Corporate SRI Sustainable Select Ex Fossil Fuel PAB Index are limited at 3%. The excess market value over the 3% cap is redistributed on a pro rata basis to all other issuers' bonds in the index that are under the 3% cap. The process is repeated until no issuer exceeds the 3% limit. For example, an issuer that represents 4% of the uncapped index will have 1% of the index's market value redistributed to each bond from all issuers under the 3% cap on a pro rata basis. The 3% issuer cap is applied each month as the index is rebalanced.

Minimum ESG Exclusions

From 28 February 2021, the following criteria will be applied. On the last business day before month end, using the Forward Universe of the previous day, after applying the Non-ESG criteria rules for inclusion, defined above, and additionally removing any non-ESG rated bonds, the number of issuers for the eligible universe are defined.

If, after having additionally applied the ESG selection criteria above, less than 20% of the total number of issuers in the eligible universe are excluded, then the eligible issuers are ranked in the order below, according to the following criteria:

- MSCI ESG Rating score (higher Ticker ESG Rating score preferred to remain in the index)
- MSCI ESG Controversies score (higher Ticker Controversies score preferred to remain in the index)

Then based on this ranking, issuers will be excluded from the index, until the number of excluded issuers is higher than 20% of the eligible universe total number of issuers. If, more than one issuer has the same ESG Rating and Controversy score and is required to be removed to reach the 20% threshold, then all issuers with the same ESG Rating and Controversy score are removed.

From July 2022 onwards, this process is run 5 business days before the corresponding month end.

Frequency

For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month.

Index Changes

During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, ticker changes, etc.) are reflected daily in both the Projected and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index on a daily basis, but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced.

Reinvestment of Cash Flows Intra-month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short-term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the Returns Universe for the following month so that index results over two or more months reflect monthly compounding.

New Issues Qualifying securities issued/announced, but not necessarily settled, on or before the month-end rebalancing date, qualify for inclusion in the following month's index if required security reference information and pricing are readily available.

PAB-Related Monthly Rebalancing Rules At every monthly rebalancing, the sector neutrality vs. parent and the 3% issuer cap will be imposed. Total index emissions will be recalculated. If the index total emissions are above those prescribed by the minimum regulatory decarbonization trajectory (7%), the Intensity-based Exclusion Algorithm will be run so that the index emissions are brought back to the prescribed 10% trajectory. As an illustration, if at month-end the emissions reduction is 6.9%, we will run the algorithm until the emissions reduction is 10% or better. This ensures that the index respects the emissions regulatory reduction target in each and every month-end.

Pricing and Related Issues

Sources & Frequency All index-eligible bonds are priced on a daily basis by Bloomberg's evaluated pricing service, BVAL.

Pricing Quotes Bonds are quoted as a percentage of par.

Timing

- 4:15pm (London time).
- On early market closes, prices are taken as of 12:00pm (London time), unless otherwise noted.
- If the last business day of the month is a UK holiday, prices from the previous business day are used.

Bid or Offer Side Bonds in the index are priced on the bid side. The initial price for new corporate issues entering the index is the offer side; after the first month, the bid price is used.

Settlement Assumptions

- T+1 calendar day settlement basis.
- At month-end, settlement is assumed to be the first calendar day of the following month, even if the last business day is not the last day of the month, to allow for one full month of accrued interest to be calculated.

Verification Daily price moves for each security are analyzed by the index pricing team. Index users may also challenge price levels, which are then reviewed and updated as needed using input from various sources.

Currency Hedging Returns hedged to various non-EUR currencies are published for the Euro Corporate SRI Sustainable Ex Fossil Fuel Index. The indices' FX hedging methodology takes rolling 1-month forward contracts that are reset at the end of each month and hedges each non-reporting currency-denominated bond in the index into the reporting currency terms. No adjustment is made to the hedge during the month to account for price movements of constituent securities in the Returns Universe of the index.

Calendar The Euro Corporate SRI Sustainable Ex Fossil Fuel Index follows the UK bond market holiday schedule. FX rates are updated daily using WM Reuters 4pm (London) rates. FX forwards are also sourced from WM Company.

Accessing Index Data

Bloomberg Terminal®	<p>Bloomberg benchmarks are the global standard for capital markets investors.</p> <ul style="list-style-type: none"> • INDE<GO> - The Bloomberg Indices dashboard page, which contains daily, monthly, and year-to-date index returns for key indices from each index family as well as a link to index publications. • IN<GO> - The Bloomberg Index Browser displays the latest performance results and statistics for the indices as well as history. IN presents the indices that make up Bloomberg's global, multi-asset class index families into a hierarchical view, facilitating navigation and comparisons. The "My Indices" tab allows a user to focus on a set of favorite indices. • DES<GO> - The index description page provides transparency into an individual index including membership information, aggregated characteristics and returns, and historical performance. • INP<GO> - The Bloomberg Indices Publications page, which includes methodologies, factsheets, monthly reports, announcements and technical notes. A user may also subscribe to index publications via the "Actions" button. • PORT<GO> - Bloomberg's Portfolio & Risk Analytics solution includes tools to analyze the risk, return, and current structure of indices. Analyze the performance of a portfolio versus a benchmark or use models for performance attribution, tracking error analysis, value-at-risk, scenario analysis, and optimization.
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Index Ticker	I34235EU: Total Return Euro Unhedged

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