

Bloomberg MSCI USD Corporate Paris Aligned Green Tilted Index

The Bloomberg MSCI USD Corporate Paris Aligned Green Tilted Index is designed to meet and exceed the minimum standards of the EU Paris Aligned Benchmark (PAB) label. The index is based on the flagship Bloomberg US Corporate Index. The index then sets an initial 50% decarbonization of absolute GHG emissions and carbon intensity relative to the standard Bloomberg US Corporate Index, followed by an annual 10% decarbonization trajectory of both measures. The index uses an optimization approach that aims to increase the weight of issuers that meet carbon reduction targets, increase the weight of green revenue versus fossil-fuel based revenue, and increase the weight of green bonds in the index, while minimizing active total risk. To be included, securities must be investment grade, fixed-rate, USD-denominated, corporate bonds with a minimum MSCI ESG Rating of BB. The index excludes issuers with a “red” MSCI ESG Controversy Score and negatively screens issuers that are involved in business activities that are restricted per Article 12 of the Delegated Acts. Additionally, issuers with involvement in nuclear weapons, civilian firearms, unconventional oil and gas, arctic oil and gas, tobacco, alcohol, and gambling are also excluded. The index was launched in May 2023, with history backfilled to August 2019.

The full Bloomberg Fixed Income Index methodology is available [here](#).

Rules for Inclusion

Sector	Corporate (industrial, utility, and financial institutions) issuers from developed markets only.
Eligible Currencies	Principal and interest must be denominated in USD.
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 promote 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	USD300mn minimum par amount outstanding.
Coupon	<ul style="list-style-type: none"> Fixed-rate coupon. Callable fixed-to-floating rate bonds are eligible during their fixed-rate term only. Bonds with 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 perpetuals, will exit the index one year prior to conversion to floating-rate. Fixed-rate perpetual bonds are not included.

Market of Issue	<ul style="list-style-type: none"> • SEC-registered securities, bonds exempt from registration at the time of issuance and SEC Rule 144A securities with registration rights are eligible. A security with both SEC Regulation-S (Reg-S) and SEC Rule 144A tranches is treated as one security for index purposes. The 144A tranche is used to prevent double-counting and represents the combined amount outstanding of the 144A and Reg-S tranches. • Global bonds are included. • Bonds that were previously SEC-registered or 144A with registration rights but later deregistered by the issuer remain index eligible. 	
Country Eligibility	Bonds with EM country of risk are excluded.	
EM Country Definition	<p>Bloomberg uses a fixed list of emerging market countries that is reviewed annually to define country eligibility in dedicated EM hard currency, local currency, and inflation-linked benchmarks. Criteria for inclusion in the EM country list are rules-based and include:</p> <ul style="list-style-type: none"> • Countries that meet one of the following two criteria: World Bank Income group classifications of low/middle income OR International Monetary Fund (IMF) classification as a non-advanced country. • Additional countries that bond investors classify as EM due to factors such as investability concerns, the presence of capital controls, and/or geographic considerations may also be included on the list and are also reviewed on an annual basis. As of April 2014, 4 additional markets are included in the Bloomberg EM country list: Czech Republic, Israel, South Korea and Taiwan. 	
Taxability	<ul style="list-style-type: none"> • Only fully taxable issues are eligible. • Dividend Received Deduction (DRD) and Qualified Dividend Income (QDI) eligible securities are excluded. 	
Seniority of Debt	Senior and subordinated issues are included.	
Security Types	<p>Included</p> <ul style="list-style-type: none"> • Bullet, putable, sinkable/amortizing and callable bonds • Original issue zero coupon • Underwritten MTN • Enhanced equipment trust certificates (EETC) • Certificates of deposit • Fixed-rate and fixed-to-floating (including fixed-to-variable) capital securities 	<p>Excluded</p> <ul style="list-style-type: none"> • Treasuries, government-related, securitized, and covered bonds • Contingent capital securities, including traditional CoCos and contingent write-down securities • Bonds with equity type features (e.g. warrants, convertibles, preferreds) • Inflation-linked bonds, floating-rate issues • Bonds originally issued in ITL • Fixed-rate perpetuals • Private placements, retail bonds • Structured notes, pass-through certificates • Illiquid securities with no available pricing

Environment, Social and Governance (ESG) Rules

MSCI Absolute GHG Emissions

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

- Where an issuer has only Scope 1 and 2 absolute GHG emissions data, but no Scope 3 data, the issuer will be excluded.

MSCI Carbon Intensity

The index does not exclude issuers based on the availability of MSCI carbon intensity/ sales (calculated using Scope 1, 2 and 3) data.

MSCI Business Involvement Screens

The index excludes issuers involved in the following business lines/activities per Article 12 of the EU Delegated Acts:

- 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 Thermal Coal, Oil, and Natural Gas $\geq 50\%$

The index additionally excludes issuers that MSCI define as having a percentage of revenue from, or being involved in, business activities related to:

- Nuclear Weapons *
- Civilian Firearm Producers
- Civilian Firearms revenue from production and distribution $\geq 5\%$
- Unconventional Oil & Gas revenue $\geq 5\%$ **
- Tobacco revenue $\geq 5\%$
- Conventional Weapons revenue $\geq 5\%$
- Weapons Systems/Components/Support Systems/Services revenue $\geq 5\%$
- Arctic oil $\geq 5\%$ **
- Arctic gas $\geq 5\%$ **
- Power Generation from Thermal Coal $\geq 10\%$ **
- Aggregate revenue from production, distribution, retail, and supply of alcohol related products $\geq 15\%$

- Alcohol production $\geq 5\%$ ***
- Aggregate revenue from gambling related business activities $\geq 15\%$
- Gambling operations $\geq 5\%$ ***

* Before December 2021, data for these fields were not available, hence these fields were omitted before this date.

** Before September 2020, data for these fields were not available, and hence these fields were omitted before this date.

*** Before March 2022, these 2 fields were proxied as alcohol producers that derived $\geq 5\%$ revenue from alcohol manufacturing/distribution/retail/license/supply and gambling operations companies that derived $\geq 5\%$ revenue from gambling-related business activities.

MSCI ESG Rating

The following criteria apply:

- Securities must have an MSCI ESG Rating of BB or higher.
- Unrated issuers from sectors with ratings are excluded.
- Prior to April 2021, ratings were applied at the ticker level. Every bond within the same ticker had the same MSCI ESG Rating.
- MSCI ESG ratings are generally updated annually but may be reviewed more frequently as needed.

MSCI ESG Controversies Screens

Excludes any issuer with a "Red" MSCI ESG Controversies score (equal to zero), which measures an issuer's involvement in major ESG controversies and how well they adhere to international norms and principles (see pages 9-11 of the [Bloomberg MSCI ESG Fixed Income Methodology](#)).

Optimization Constraints and Calculations

Overview

- All qualifying securities are selected from the Bloomberg US Corporate Index ("Parent Index")
- The Bloomberg PORT Optimizer is used to select and weight each security in the Index.
 - The optimizer runs once per month to calculate notional positions of each bond
 - This process will not impact bond prices and other security-level analytics
- The optimizer has one main goal:
 - Minimize Active Total Risk versus the Parent Index. This is the ex-ante (or predicted) tracking error based on the Bloomberg Fixed Income Multi-Factor Risk model

Optimization Constraints

Each of these constraints are hard constraints, meaning that the optimizer will only consider solutions within these bounds.

Climate Constraints	
Reduction in weighted average absolute GHG emissions relative to the Parent Index ¹	-50%
Minimum annual reduction in weighted average absolute GHG emissions relative to the absolute GHG emissions at Base Date ²	-10%
Reduction in weighted average carbon intensity / sales relative to the Parent Index ^{1,5}	-50%
Minimum annual reduction in weighted average carbon intensity / sales relative to the carbon intensity at Base Date ²	-10%
Minimum increase in weighted average green revenue relative to the Parent Index	+100%

Minimum green to fossil-fuel based ratio relative to the Parent Index	4x
Minimum increase in weight for issuers setting carbon reduction targets relative to the Parent Index ³	+20%

Green Bond Constraint	
Minimum increase Green Bond security weight relative to their weight in Parent Index	2x

Investability Constraints	
Ticker cap	3%
Security weight relative to Parent Index	
- minimum	0.1x
- maximum	6x
Ticker weight relative to the Parent Index	+/- 1%
DTS (duration times spread) relative to Parent Index	+/- 5%
YTW (yield to worst) relative to Parent Index	>=
OAD (option-adjusted duration) relative to Parent Index	+/- 0.25
Index Rating relative to Parent Index	0.25
Ticker CTD (contribution to duration) relative to Parent Index	+/- 0.05
Bloomberg Class 3 sector weight relative to Parent Index ⁴	+/- 5%
Country of risk weight relative to Parent Index	+/- 5%
Turnover relative to the initial portfolio	Parent Index +2%

Notes:

- At index inception ("Base Date"), the weighted average absolute GHG emissions (Scopes 1, 2 and 3) and also carbon intensity / sales (Scopes 1, 2 and 3) in the Bloomberg MSCI USD Corporate Paris Aligned Green Tilted Index must be reduced by 50% relative to the weighted average absolute GHG emissions and carbon intensity / sales of the Parent Index.

$$\sum (Bond\ weight\ in\ index * Bond\ level\ GHG\ emission)$$

$$\sum (Bond\ weight\ in\ index * Bond\ level\ carbon\ intensity/sales)$$

Note: issuers with unreported emissions or intensity / sales are excluded from the weighted average calculations.

- At each monthly rebalance, the weighted average absolute GHG emissions and carbon intensity / sales in the Bloomberg MSCI USD Corporate Paris Aligned Green Tilted Index must be reduced by the lower of:

- minimum reduction of 50% relative to the Parent Index (refer to formula in note 1); or
- minimum decarbonisation trajectory of 10% relative to Base Date

$$W_t = W_1 \times 0.90^{\frac{(t-1)}{12}}$$

t = number of monthly index rebalances

W₁ = weighted average absolute GHG emission or carbon intensity / sales of the PAB index at Base Date

- At each monthly rebalance, Tickers that meet carbon reduction targets receive a minimum 20% increase in weight relative to the Tickers' weight in the Parent Index. To achieve the weight increase, Tickers must meet the following requirements:

- a. Must have reported absolute GHG emissions; and
 - b. Must have explicitly set carbon reduction targets; and
 - c. Must have achieved a minimum 7% year-on-year absolute GHG emissions reduction over the previous 4 years
4. BCLASS 3 Energy sector is excluded from the sector constraint.
5. Carbon intensity / sales constraint is applied only to issuers that MSCI have reported or estimated Scope 1, 2 and 3 carbon intensity / sales data.

Infeasible Optimizations

If, on any month, the optimization task is not feasible, the Turnover constraint will be increased in increments of 0.5% until a result is found.

In case of infeasibility due to conflicting constraints between the: 1) 2x minimum increase in Green Bond security weights and 2) the ticker cap 3%, the ticker cap constraint would be relaxed to ensure the Green Bond constraint is still met.

GHG Emission Trajectory Base Date

The index Base Date was reset on June 30, 2020 to align with the introduction of MSCI Scope 3 emission data. Previously, the index Base Date was set to July 30, 2019.

Rebalancing Rules

Frequency

The composition of the index is rebalanced on the fifth last business day of each month and represents the fixed set of bonds on which index returns are calculated for the next month. Qualifying securities issued after the index has been rebalanced, but before month-end, will not be included in the index until the next rebalance.

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. These changes will affect the composition of the index 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 (i.e. the fifth last business day of each month), qualify for inclusion in the index if required security reference information and pricing are readily available. Securities issued/announced after the month-end rebalancing date will not be included in the index until the following month.

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	<ul style="list-style-type: none"> • Prior to January 14, 2021, bonds are priced at 3 p.m. (New York time). On early market closes, prices are taken as of 1 p.m. (New York time), unless otherwise noted. • From January 14, 2021, and onwards, bonds are priced at 4 p.m. (New York time). On early market closes, prices are taken as of 2 p.m. (New York time), unless otherwise noted. • If the last business day of the month is a public 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	<ul style="list-style-type: none"> • 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.
Calendar	The Bloomberg MSCI USD Corporate Paris Aligned Green Tilted Index follows the US 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.
Bloomberg Indices Website www.bloomberg.com/indices	<p>The index website makes available limited index information including:</p> <ul style="list-style-type: none"> • Index methodology and factsheets • Current performance numbers for select indices

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- Clients may receive standard files or may customize file contents
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Index Ticker

I37953US: Total Return USD Unhedged

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