

Bloomberg Barclays MSCI Global Green Bond Index

The Bloomberg Barclays MSCI Green Bond Index offers investors an objective and robust measure of the global market for fixed income securities issued to fund projects with direct environmental benefits. An independent research-driven methodology is used to evaluate index-eligible green bonds to ensure they adhere to established Green Bond Principles and to classify bonds by their environmental use of proceeds. The index was created in November 2014, with index history backfilled to January 1, 2014.

Rules for Inclusion: Fixed Income Criteria

Sector	Treasury, corporate, government-related, and securitized bonds are included. This includes taxable municipals.
Eligible Currencies	<ul style="list-style-type: none"> The Global Green Bond Index is a multi-currency benchmark that includes local currency debt markets tracked by the Bloomberg Barclays Global Aggregate Index. Principal and coupon must be denominated in one of the following eligible currencies: <ul style="list-style-type: none"> Americas: CAD, CLP, COP, MXN, PEN, USD EMEA: CHF, CZK, DKK, EUR, GBP, HUF, ILS, NOK, PLN, RON, RUB, SEK Asia-Pacific: AUD, CNY, HKD, IDR, JPY, KRW, MYR, NZD, SGD, THB Eligible currencies will not necessarily have debt included in the index if no securities satisfy the inclusion rules. New currency inclusion is reviewed annually through the index governance process. To be considered for inclusion, new currency candidates must be rated investment grade and sufficiently tradable, convertible and hedgeable for international investors.
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"> Local currency treasury and hard currency sovereign issues are classified using the middle issuer-level local currency and hard currency debt ratings from each agency for all outstanding bonds, even if bond-level ratings are available. 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. German Pfandbriefe are assigned ratings that are one full rating category above the issuer's unsecured debt. For the Canadian Dollar market, DBRS is considered in addition to Moody's, S&P, and Fitch. When all four ratings agencies are available, the highest and lowest ratings are removed and the lower of the two remaining is used.
Amount Outstanding	<p>Fixed minimum issue size are set for all local currency markets:</p> <ul style="list-style-type: none"> 150mn: CAD 300mn: USD (excluding MBS, ABS, and CMBS)*, EUR, CHF, AUD 200mn: GBP 35bn: JPY 1bn: RON, PEN, USD MBS pass-throughs 25mn: USD ABS and CMBS tranches* 2bn: DKK, NOK, PLN, ILS, HKD, MYR 2.5bn: SEK 5bn: CNY** 10bn: MXN, CZK, THB 20bn: RUB

Rules for Inclusion: Fixed Income Criteria

- 500mn: NZD, SGD
- 200bn: HUF
- 100bn: CLP
- 500bn: KRW
- 1trn: COP
- 2trn: IDR

**As of April 1, 2017, ABS and CMBS tranches eligible for the US Aggregate between \$25–300mn became eligible for Global Green Bond Index.*

*** The minimum amount outstanding required for CNY-denominated treasury and policy bank debt is CNY 5bn. The total amount of index-eligible CNY debt will be phased into the Global Aggregate Index at 5% increments over a 20 month period starting April 1, 2019 until November 2020 when 100% of index-eligible debt will be reflected in the index.*

Coupon

- Fixed-rate coupon.
- Callable fixed-to-floating rate bonds are eligible during their fixed-rate term only.
- Bonds with a step-up coupon that changes according to a predetermined schedule are eligible.

Maturity

- Unlike other Bloomberg Barclays Aggregate Bond Indices, the Global Green Bond Index does not have a 1-year minimum time to maturity and will hold bonds until final maturity. The inclusion of Green Bonds to maturity within the indices is designed to accommodate this market practice by not forcing unwanted turnover.
- Bonds that convert from fixed to floating rate, including fixed-to-float perpetuals, will exit the index before converting to floating-rate. Fixed-rate perpetual bonds are not included.
- Sub-indices based on maturity are inclusive of lower bounds. Intermediate maturity bands include bonds with maturities of 1 to 9.999 years. Long maturity bands include maturities of 10 years or greater.

Taxability

- Only fully taxable issues are eligible.
- Build America Bonds (BABs) with the tax credit to the issuer are eligible; those with tax credits issued to investors are considered tax exempt.
- Dividend Received Deduction (DRD) and Qualified Dividend Income (QDI) eligible securities are excluded.

Market of Issue

Publicly issued in the global and regional markets.

Seniority of Debt

Senior and subordinated issues are included.

Security Types

Included

- Fixed-rate bullet, putable, sinkable/amortizing and callable bonds
- Taxable municipal securities, including Build America Bonds (BABs)
- Original issue zero coupon bonds
- Bonds issued through underwritten MTN programs
- Enhanced equipment trust certificates (EETC)
- Certificates of deposit
- Fixed-rate and fixed-to-float (including fixed-to-variable) capital securities
- Loan participation notes
- US Agency CMBS (as of July 1, 2014)
- Malaysian government Sukuk (as of April 1, 2015)

Excluded

- Contingent capital securities, including traditional CoCos and contingent write-down securities, with explicit capital ratio or solvency/balance sheet-based triggers
- Bonds with equity type features (e.g., warrants, convertibles, preferreds, DRD/QDI-eligible issues)
- Inflation-linked bonds, floating-rate issues
- Fixed-rate perpetuals
- Tax-exempt municipal securities
- Private placements, retail bonds
- Sinkable Russian OFZ bonds issued prior to 2009
- USD25/USD50 par bonds
- Structured notes, pass-through certificates
- Non-ERISA eligible CMBS
- US agency MBS hybrid ARMs
- Formosa bonds (as of April 1, 2017)
- Illiquid securities where reliable pricing is unavailable

Rules for Inclusion: Green Bond Eligibility and Classification

Overview

- Green bonds are fixed income securities in which the proceeds will be exclusively and formally applied to projects or activities that promote climate or other environmental sustainability purposes through their use of proceeds.
- For the Bloomberg Barclays MSCI Global Green Bond Index, securities are independently evaluated by MSCI ESG Research along four dimensions to determine whether they should be classified as a green bond. These eligibility criteria reflect themes articulated in the Green Bond Principles and require commitments about a bond's:
 - Stated use of proceeds;
 - Process for green project evaluation and selection;
 - Process for management of proceeds; and
 - Commitment to ongoing reporting of the environmental performance of the use of proceeds.
- Both self-labeled green bonds and unlabeled bonds will be evaluated using these criteria for potential index inclusion. So long as projects fall within an eligible MSCI ESG Research green bond category and there is sufficient transparency on the use of proceeds, a bond will be considered for the index even if it is not explicitly marketed as green.
- Meeting all four criteria is required for bonds issued after the publication of the Green Bond Principles in 2014. Green bonds issued prior to 2014 that are widely accepted by investors as green bonds may still qualify for the index, even if all four principles are not satisfied, since no formal guidelines were available to issuers at the time of issuance.

Stated Use of Proceeds

- Use of proceeds and project bonds are considered eligible if the use of proceeds falls within at least one of six eligible environmental categories defined by MSCI ESG Research (alternative energy, energy efficiency, pollution prevention and control, sustainable water, green building, and climate adaptation). In cases where project categories do not overlap entirely, MSCI ESG Research will consider bonds eligible if at least 90% of the projected use of proceeds falls within eligible categories.
- Until Dec 1, 2019, general purpose bonds were considered eligible if the issuer was considered pure-play. A pure-play issuer is defined as a legal entity with greater than 90% of activities (as measured by revenues) within one or more of the eligible environmental categories, except where proceeds are explicitly used to finance another company's operations (e.g., through payment of a dividend to a non-pure-play parent company). Post Dec 1, 2019, general purpose bonds by pure-play issuers need to meet all the four principles of the Bloomberg Barclays MSCI Green Bond Index in order to be eligible for the Index. General purpose bonds by pure-play issuers that were a part of the Index prior to Dec 1, 2019 have been grandfathered in the Index.
- The six eligible environmental categories defined by MSCI ESG Research are listed below.
 - Alternative Energy
 - Energy Efficiency
 - Pollution Prevention and Control
 - Sustainable Water
 - Green Building
 - Climate Adaptation
- These categories are not mutually exclusive - a bond may fall into one or more of the categories.
- Other environmental activities that do not fit into these categories, including sustainable forestry/afforestation may also be candidates for inclusion based on evaluations by MSCI ESG Research.

Process for Green Project Selection

- Bonds are considered eligible if the issuer clearly delineates the specific criteria and process for determining eligible projects or investments in the bond prospectus or supporting documentation (e.g., green bond supplement, website, investor presentation).
- Project criteria must outline either specific projects or the specific categories of activities to be financed. Examples of eligible criteria include "Alta Wind acquisition" or "installation of wind turbines, production of photovoltaic cells, and rehabilitation of municipal water infrastructure to reduce waste water discharge." Examples of non-eligible criteria include "green initiatives and other projects that contribute to environmental sustainability" without further definition.
- A second-party opinion is not sufficient in the absence of clearly defined processes and criteria for project selection.

Management of Proceeds

- A formal process to ring-fence net proceeds to the eligible use of proceeds must be disclosed in the bond

Rules for Inclusion: Green Bond Eligibility and Classification

prospectus or supporting documentation (as defined above). Eligible mechanisms to ring-fence net proceeds include:

- Direct recourse to eligible revenues or assets (e.g., a green securitized bond, green project bond, or green revenue bond);
 - Creation of a separate legal entity;
 - Creation of a sub-portfolio linked to the issuer's investment operations for eligible projects;
 - Other auditable mechanism whereby the balance of tracked proceeds is reduced periodically by amounts matching investments made in eligible projects during that period.
- Third-party verification by an external auditor is preferred but not required.

Ongoing Reporting

- At issuance, issuers of index eligible green bonds must either report on projects financed by the bonds' proceeds, or commit to doing so within one year. This reporting obligation will continue until bond proceeds have been fully dispersed or for the life of the bond, as circumstances necessitate. For reporting to be considered eligible, it must include one or more of the following:
 - A list of specific projects/investments, including amount disbursed to each individual project;
 - Aggregate project/investment categories, including amount disbursed to each project type;
 - Quantitative or qualitative reporting on the environmental impact of the project pool (e.g., greenhouse gas emissions savings, reduction in water consumption, increased energy efficiency per unit of output, etc.).
- MSCI ESG Research reserves an additional three months beyond the 12-month deadline to review an issuer's green bond report. This allows time for the green bond report to be located and contact to be made with the issuer in case any questions or issues are raised.
- If an issuer has not published a report within 15 months of issuance, or 15 months of the prior use of proceeds report, it will be flagged as "On Watch" in the next monthly green bond technical note, with details provided in the note regarding the timing and process for removal of the bond from the index.
- If the issuer has not published a report within 18 months from issuance or the last annual report, its bond(s) will be removed from the index upon the next index rebalance. Furthermore, the bond(s) will be considered permanently ineligible for the index.

Rebalancing Rules

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.

- The formal list of green bonds evaluated and identified by MSCI ESG Research is updated on the 25th calendar day of each month. MSCI evaluations must be completed by the evaluation date to qualify for inclusion at the next index rebalancing.
- The Bloomberg Barclays MSCI Green Bond Index is rebalanced on the last business day of each month. New issues will not be added to the Projected Universe until after the Green Bond Evaluation Date.

Index Changes

During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, and ticker changes) are reflected daily in 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, but not necessarily settled on or before the month-end rebalancing date, qualify for

Rebalancing Rules

inclusion in the following month's index if the required security reference information and pricing are readily available.

Pricing and Related Issues

Sources & Frequency	All index-eligible bonds are priced on a daily basis by Bloomberg's evaluated pricing service, BVAL, except CHF-denominated bonds (which are priced by SIX) and JPY-denominated corporates (which are priced by JSDA).
Timing	<p>Prices are snapped at the following times:</p> <ul style="list-style-type: none"> • North American currency bonds: 4pm (New York time); 4pm (New York time) for taxable municipal bonds; 4pm (Toronto time) for CAD-denominated securities. USD-denominated bonds prior to January 14, 2021 used 3pm New York time pricing snap. • Pan-European currency bonds: 4:15pm (London time); 4pm (London time) for CHF-denominated securities. • Asian currency bonds: 5pm (Sydney time) for AUD-denominated and NZD-denominated securities; 3pm (Tokyo time) for JPY-denominated; 5pm (Shanghai time) for CNY-denominated securities; 5pm (Tokyo time) for all other securities. <p>If the last business day of the month is a public holiday in a major regional market, prices from the previous business day are used to price bonds in that particular market.</p>
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. Japanese, Euro, and Sterling treasury bonds use mid prices.
Settlement Assumptions	T+1 calendar day settlement basis for all bonds except MBS, which are priced for Public Securities Association (PSA) settlement in the following month and discounted back to same-day settlement. 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 to identify outliers. Index users may also challenge price levels, which are then reviewed and updated as needed.
Currency Hedging	Returns hedged to various currencies are published for multi-currency indices. The indices' FX hedging methodology takes rolling one-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 Global Green Bond Index is a global, multi-currency index that is generated every business day of the year except for January 1, the only holiday common to all regional calendars. During holidays observed by local markets, the index will still be generated using prices from the previous business day. 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"> • INDEX<Go> – The Bloomberg Indices landing page is a dashboard for index-related information on the terminal. Find daily and monthly index returns for key indices from each index family as well as index publications including methodologies, factsheets, monthly reports, updates and alerts. • 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. • 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. • DES<Go> – The index description page provides transparency into an individual index including membership information, aggregated characteristics and returns, and historical performance.
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Index Ticker	<p>GLGBTRUU: Total Return USD Unhedged</p>

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Bloomberg requires index data licenses for services and products linked to the Indices

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June 24, 2021

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