



# **Invesco Global ex-Japan Green Horizons Bond Index Methodology**

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## Index Overview

### Description

The Invesco Global ex-Japan Green Horizons Bond Index (the “Index”) is designed to provide exposure to investment grade bonds issued by global (excluding Japan) corporations, sovereigns, or government-related entities that are designated “Green Bonds” by an independent evaluator<sup>1</sup>.

### Index Universe

The Index Universe includes global (excluding Japan), fixed, step-up, or zero-coupon bonds with a final maturity greater than or equal to one year issued by corporations, sovereigns, or government-related entities. Appendix 1 describes the country selection process by which countries are assigned as developed or emerging market. Appendix 2 describes the process by which companies are assigned to their appropriate countries. The Index Universe only includes investment grade bonds with an average credit rating that is greater than or equal to BBB- (or equivalent). The average credit rating is derived from the numerical value equivalent of a security’s available credit rating from Standard and Poor’s, Fitch, and Moody’s (see Appendix 4). The letter designation of the average credit rating follows that of Standard and Poor’s. The bonds must be relatively liquid, as proxied by issue size. To enter and remain in the Index Universe all bonds must have a minimum local currency face value outstanding, which varies by country (see Appendix 5). For corporations with a bond issued as SEC-registered, Reg S, and/or Rule 144A, only one bond type will be Included in the Index. Preference will be given to SEC-registered bonds followed by Reg S bonds, followed by Rule 144A bonds.

The Index Universe explicitly excludes private placements (except Reg S and 144A securities); asset-backed, pass-through, inflation-linked, floating-rate, perpetual, and convertible bonds; warrants; and preferred securities.

### Security Selection

The Index includes all constituents of the Index Universe that are designated as “Green Bonds” by an independent evaluator<sup>1</sup>.

Securities are excluded if pricing data is not available from the Calculator (see Index Calculation and the role of the Calculation Agent on page 6.)

### Security Weighting

Index constituents are market value weighted. All securities are limited to a 10% maximum weight at each Index update.

All security weighting criteria are applied on the Reference Date of an Index update (see Updates on page 5).

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<sup>1</sup> Green Bond status determined by Climate Bonds Initiative.

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**History**

The Index was launched on February 13, 2020. History is available for the Index since its base date of December 31, 2015. The base value of the Index is 100.

**Related Indexes**

Other related indexes include:

Invesco Global ex-Japan Environmental Stewards Corporate Bond Index

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## Updates

### Index Rebalance

The Index is rebalanced each calendar month (“Rebalance Months”). At that time, the set of eligible securities is determined, securities are selected for membership in the Index, and the Index is reweighted. See “Index Overview” on page 3 for more information about security selection and weighting.

### Index Key Dates

The key dates are as follows. The Index Review Team (see Governance on page 8) may change these dates for reasons including market holidays. Any such changes will be publicly announced with as much advance notice as possible under the circumstances. All events take place after the close.

Event	Day	Description
Reference Date	The 15th day of the month	Data is captured for Index construction
Announcement Date	Four business days before the last business day of the month	Summary of Index rebalance changes are announced to public
Pro-Forma Date	Four business days before the last business day of the month	Preliminary Index weights begin to be distributed to Index subscribers
Effective Date	Calendar month-end, whether or not the date is also a business day	Rebalanced Index weights are finalized

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## **Index Calculation and the Role of the Calculation Agent**

The calculation agent for the Index (“the Calculator”) is ICE Data Indices, LLC. The Calculator evaluates the closing value of the Index, updates the Index at Rebalance Months based on constituent selections and weightings determined either by Invesco Indexing LLC or the Calculator (with appropriate oversight and review by Invesco Indexing), taking into account Corporate Events (see Corporate Events on page 7), and disseminates the values of the Index to Invesco Indexing LLC and major index data distribution partners (see Index Information and Data Dissemination on page 10).

### **Calculator Input Data Used and Hierarchy of Input Data**

The Index is calculated using closing prices or last transacted prices of underlying constituent securities from exchanges or exchange equivalents. Should this type of data be unavailable, the Index may be calculated using quotes or evaluated data or, in case when continued availability of transacted security prices from security exchanges is suspended, the Calculator reserves the right to exercise a judgement call, including carrying forward the latest available closing price.

### **Use of Discretion and/or Expert Judgement**

No discretion or expert judgement is exercised by Invesco Indexing LLC in the determination of daily index pricing. Rules-based index methodologies, which cover index construction, maintenance and calculation, provide that discretion is not used in the daily pricing of the indexes except in unusual cases not effectively addressed by the methodology, which could be exercised by the Calculator. These include, but may not be limited to:

- Corporate events not previously encountered,
- Structural changes to the underlying markets,
- Operational issues at security exchanges,
- Geo-political events,
- Technological problems / failures, or
- Natural disaster or other business continuity process-related event.

In such circumstances, the calculating agent will inform Invesco Indexing LLC of any discretion being used.

### **Potential Limitations of the Methodology and Benchmark Calculation**

The potential limitations of daily Index calculation include circumstances where the prices of constituent elements of the Index are not available, either because there are insufficient participants or because the exchange(s) / exchange equivalent(s) suffers an unexpected outage or closure or Invesco and/or the Calculator is denied permission to use such data for determining the Index. In such circumstances an announcement will be made to notify clients, including whether the Index will not be published or delayed in publication.

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## Corporate Events

The Calculator identifies and adjusts for corporate events based on the following policy.

Corporate Events	Index Adjustments
Accrued Interest and Cash	With the exception of US securitized products (MBS, CMBS, CMO and ABS), accrued interest is calculated assuming next-day settlement. Accrued interest for US securitized products assumes same-day settlement. Cash flows from bond payments that are received during the month are retained in the Index until the end of the month and then are removed as part of the rebalancing. Cash from coupon payments is reinvested at the 1-month London Interbank Bid Rate (LIBID) while it is held in the Index.
Called Securities	Securities that are announced as called, and for which the amount called meets certain minimum thresholds, are removed from the Index at the next rebalancing provided this occurs on or before the third business day before the last business day of the month. Cash flows from called bonds that are received during the month are retained in the Index until the end of the month and then are removed as part of the rebalancing. Cash from called bonds does not earn any reinvestment income while it is held in the Index.
Default Treatment	Defaulted securities are excluded from the Index at the next rebalancing following the default event, provided this occurs on or before the third business day before the last business day of the month. Securities are considered in default based on their individual legal terms. A rating of "D" by a major rating agency is not a consideration for default status.
No Re-entry Once Removed for Lack of Pricing	If a bond is removed due to lack of pricing that bond will not qualify for entry into the Index at a later date even if adequate pricing subsequently becomes available.

As mentioned above in the Index Calculation and the Role of the Calculation Agent section, the Calculator manages corporate events for this Index using its standard corporate event framework and its divisor index methodology. For additional details, please refer to <https://indices.theice.com>.

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## Index Policy

All Index constituents are evaluated daily for data needed to calculate Index levels and returns. The Index follows the general Index policies of the Calculator as described below.

### Announcements

Best efforts are made to announce any changes to Index methodology well ahead of time via the Invesco Indexing website and via email to all Index clients.

### Pro-Forma Files

Invesco Indexing provides constituent pro-forma files (*IND10Projected\_yyyymmdd.csv*) each time the Index rebalances. The pro-forma file is typically provided daily in advance of the rebalancing date and contains all constituents and their corresponding weights effective for the upcoming rebalancing. The actual weight of each security at the Index rebalance typically differs from the pro-forma weights due to market movements.

### Holiday Schedule

The Index is calculated on global business days and the last calendar day of every month. If the last calendar day of the month falls on a weekend, all prices are rolled from the last business day and accrued interest is calculated for the new settlement date. The Index is not calculated on Global Holidays (defined as weekdays on which WM Company/Reuters does not publish closing FX rates) unless a Global Holiday falls on the last calendar day of the month, in which case prices are updated in all local markets that are open. Prices in all markets that are closed are rolled from the prior business day and accrued interest is calculated for the new settlement date.

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## Governance

The Index is managed by the Index Review Team (IRT). The IRT consists solely of members of Invesco Indexing. The IRT meets at least annually to review and revise Index methodology described in this document as appropriate. The IRT meets at least annually to review additions and deletions to the Index. All changes to the Index on Rebalance Months are subject to the approval of the IRT, and the IRT may make adjustments to the Index at its discretion when such changes are reasonable.

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## Index Methodology Update and Cessation Policy

Invesco Indexing periodically, at least annually, reviews each Index and its accompanying methodology, in addition to periodic rebalancing (if applicable), in an effort to ensure the Index continues to accurately represent that portion of the market it was originally intended to, and delivers the outcomes one would expect from the Index's exposures.

The procedures for the internal review of the methodologies, changes to the methodologies and procedures performed when the Index administered is ceasing publication are described in detail in the Changes to Benchmark Methodology and Cessation Policy.

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## Return Types and Tickers

The Calculator computes the total return for the Index on a daily basis. The Index is available with a base currency of Japanese yen (JPY).

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Return Type	Ticker
Total Return (JPY)	IIGKGHY

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## Index Information and Data Dissemination

### Data Vendors

Daily Index levels for all return types are available from major quote vendors and at [www.InvescoIndexing.com](http://www.InvescoIndexing.com).

### FTP

Daily constituent data and Index level data are available via the Invesco Indexing secure FTP site for Index subscribers. Please contact Invesco Indexing customer service at [IndexSupport@invesco.com](mailto:IndexSupport@invesco.com) for more information.

### File Types

The Invesco Indexing secure FTP site for Index subscribers will distribute the standard overnight Index files from the Calculator. These include:

File Description	File Extension
Index Levels	IndexIND_yyyymmdd.csv
Constituent Details	IND10_yyyymmdd.csv
Constituent Details Pro-forma	IND10Projected_yyyymmdd.csv

The data on these files is provided directly by the Calculator, and no descriptive information contained in these files is used by Invesco Indexing at any stage of the Index creation process. In addition, security characteristics are available upon request. The characteristics are created by Invesco Indexing periodically and are updated as necessary. The characteristics data contribute to the creation of the Index or otherwise help to describe the Index constituents. These data include sector, country, region, bond type, aggregate credit rating and developed/emerging classification. Please contact Invesco Indexing customer service at [IndexSupport@invesco.com](mailto:IndexSupport@invesco.com) for more information.

### Website

Index information is available on the Invesco Indexing website at [www.InvescoIndexing.com](http://www.InvescoIndexing.com).

## Definitions of Key Terms

Terms used in this document but not otherwise defined are defined in the following table. Definitions, that are marked with a ( \* ) are sourced from Regulation (EU) 2016/1011 (“EU Benchmark Regulation”) Article 3. Definitions, that are marked with a ( \*\* ) are sourced from IOSCO Principles for Financial Benchmarks<sup>2</sup>.

Term	Definition
<b>Administrator *</b>	‘Administrator’ means a natural or legal person that has control over the provision of a benchmark;
<b>Benchmark *</b>	‘Benchmark’ means any index by reference to which the amount payable under a financial instrument or a financial contract, or the value of a financial instrument, is determined, or an index that is used to measure the performance of an investment fund with the purpose of tracking the return of such index or of defining the asset allocation of a portfolio or of computing the performance fees;
<b>Calculation Agent **</b>	A legal entity with delegated responsibility for determining a Benchmark through the application of a formula or other method of calculating the information or expressions of opinions provided for that purpose, in accordance with the Methodology set out by the Administrator;
<b>Contribution of Input Data *</b>	‘Contribution of input data’ means providing any input data not readily available to an administrator, or to another person for the purposes of passing to an administrator, that is required in connection with the determination of a benchmark, and is provided for that purpose.
<b>Corporate Action</b>	A Corporate Action occurs when there is a change to a company’s capital structure. Unlike Corporate Events, Corporate Actions have a prescribed ex-date. The share price will be subject to an adjustment on the ex-date and Invesco Indexing and/or the calculating agent will adjust the index to counteract the effect that the price change would otherwise have on the index. Examples of corporate actions include rights or entitlement issues, consolidations, stock splits and capital repayments.
<b>Expert Judgment *</b>	‘Expert judgement’ means the exercise of discretion by an administrator or a contributor with respect to the use of data in determining a benchmark, including extrapolating values from prior or related transactions, adjusting values for factors that might influence the quality of data such as market events or impairment of a buyer or seller’s credit quality, and weighting firm bids or offers greater than a particular concluded transaction;
<b>Index*</b>	‘Index’ means any figure: (a) that is published or made available to the public; (b) that is regularly determined: (i) entirely or partially by the application of a formula or any other method of calculation, or by an assessment; and (ii) on the basis of the value of one or more underlying assets or prices, including estimated prices, actual or estimated interest rates, quotes and committed quotes, or other values or surveys;
<b>Input Data *</b>	‘Input data’ means the data in respect of the value of one or more underlying assets, or prices, including estimated prices, quotes, committed quotes or other values, used by an administrator to determine a benchmark;
<b>Material Change to Methodology</b>	In determining whether a change to an Index is material, the following factors shall be taken into account: <ul style="list-style-type: none"> <li>• Economic impact of the change;</li> <li>• Whether the change affects the original purpose of the Index.</li> </ul>
<b>Methodology **</b>	The written rules and procedures according to which information is collected and the Benchmark is determined;
<b>Rebalance</b>	The regular process (typically quarterly, semi-annually or annually) in which the eligibility and weights of constituent elements of indexes are reassessed;
<b>Subscriber **</b>	A person or entity that purchases Benchmark determination services from an Administrator;
<b>Transaction Data *</b>	‘Transaction data’ means observable prices, rates, indices or values representing transactions between unaffiliated counterparties in an active market subject to competitive supply and demand forces;

<sup>2</sup> <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD415.pdf>

## Appendix

### Appendix 1. Country Selection

Requirement	Description	Developed	Tier 1 Emerging	Tier 2 Emerging
Inflation	No hyperinflation in the past 3 years	✓	✓	✓
Income	Not a World Bank low income country	✓	✓	-
	GNI at least 1.6 (1.4) times the World Bank high income threshold for new (current) constituents in each of last 3 years	✓	-	-
Openness of financial markets	No significant foreign ownership limits	✓	-	-
Sovereign debt quality	Sovereign debt credit rating is not below Baa3 (Baa2) for new (current) constituents in the past 3 years	✓	-	-
Maturity of public equity market	Country market cap within top 99.5% (99.9%) of world for new (current) constituents in 2 of past 3 years.	At least 1	At least 1	At least 2
	Country revenue within top 99.5% (99.9%) of world for new (current) constituents in 2 of past 3 years.			
	Country trade volume within top 99.5% (99.9%) of world for new (current) constituents in 2 of past 3 years.			

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## **Appendix 2. Country Assignment**

Three criteria are considered when assigning a company to the Invesco Indexing Country: the country in which the company is headquartered, the country in which the company is incorporated, and the country that is most relevant for the company's equity trading (equity trading is used as this tends to be the most easily observable). If all of these are the same, then the company is assigned to that country. If the company is headquartered and trades in the same country, then this defines the country. Otherwise, if the company is incorporated and trades in the same country, then this defines the country. In the cases where neither the country of headquarter nor the country of incorporation align with trading, the company is assigned to the headquarters country if that country is an emerging market and is not considered a tax haven. Otherwise, the company is assigned to the country that is most relevant for the company's securities trading.

### Appendix 3. Region Classification

Americas
Developed
Canada
United States
Emerging
Brazil
Chile
Colombia
Mexico
Peru
Asia
Developed
Australia
Hong Kong
Japan
New Zealand
Singapore
South Korea
Emerging
China
India
Indonesia
Malaysia
Philippines
Taiwan
Thailand
Vietnam

Europe
Developed
Austria
Belgium
Denmark
Finland
France
Germany
Ireland
Italy
Luxembourg
Netherlands
Norway
Portugal
Spain
Sweden
Switzerland
United Kingdom
Emerging
Czech Republic
Greece
Hungary
Poland
Russia
Middle East & Africa
Israel
Morocco
South Africa
Turkey
United Arab Emirates

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**Appendix 4. Credit Rating Conversion Table**

S&P	MOODY	FITCH	VALUE	GROUP
AAA	AAA	AAA	750	AAA
AA+	AA1	AA+	740	AA
AA	AA2	AA	730	
AA-	AA3	AA-	720	
A+	A1	A+	710	A
A	A2	A	700	
A-	A3	A-	690	
BBB+	BAA1	BBB+	680	BBB
BBB	BAA2	BBB	670	
BBB-	BAA3	BBB-	660	
BB+	BA1	BB+	650	BB
BB	BA2	BB	640	
BB-	BA3	BB-	630	
B+	B1	B+	620	B
B	B2	B	610	
B-	B3	B-	600	

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**Appendix 5. Minimum Bond Face Value in Local Currency**

Currency	Minimum Face Value (in millions)
AUD	600
CAD	600
CHF	350
DKK	15,000
EUR	600
GBP	250
HKD	500
ILS	1,000
KRW	400,000
NOK	2,000
NZD	500
SEK	10,000
SGD	300
USD	300

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