

INDEX GUIDELINE

Solactive Green Bond EUR USD IG Index

Version 1.7

21 September 2021



TABLE OF CONTENTS

Introduction	3
1. Index Specifications	4
1.1. Scope of the Index	4
1.2. Identifiers and Publication	4
1.3. Initial Level of the Index	4
1.4. Prices and calculation frequency	4
1.5. Licensing.....	5
2. Index Selection	6
2.1. Selection of the Index Components	6
2.2. Weighting of the Index Components.....	7
3. Rebalance	7
3.1. Ordinary Rebalance	7
3.2. Extraordinary Rebalance	7
4. Calculation of the Index	9
4.1. Index formula	9
4.2. Accuracy	9
4.3. Adjustments.....	9
4.4. Corporate actions.....	9
4.5. Recalculation.....	11
4.6. Market Disruption.....	11
5. Miscellaneous.....	12
5.1. Discretion	12
5.2. Methodology Review.....	12
5.3. Changes in calculation method.....	12
5.4. Termination	13
5.5. Oversight	13
6. Definitions.....	14
Contact.....	15



INTRODUCTION

This document (the "GUIDELINE") is to be used as a guideline with regard to the composition, calculation and maintenance of the Solactive Green Bond EUR USD IG Index (the "INDEX"). Any amendments to the rules made to the GUIDELINE are approved by the OVERSIGHT COMMITTEE specified in Section 5.5. The INDEX is owned, calculated, administered and published by Solactive AG ("SOLACTIVE") assuming the role as administrator (the "INDEX ADMINISTRATOR") under the Regulation (EU) 2016/1011 (the "BENCHMARK REGULATION" or "BMR"). The name "Solactive" is trademarked.

The text uses defined terms which are formatted with "SMALL CAPS". Such Terms shall have the meaning assigned to them as specified in Section 6 (Definitions).

The GUIDELINE and the policies and methodology documents referenced herein contain the underlying principles and rules regarding the structure and operation of the INDEX. SOLACTIVE does not offer any explicit or tacit guarantee or assurance, neither pertaining to the results from the use of the INDEX nor the level of the INDEX at any certain point in time nor in any other respect. SOLACTIVE strives to the best of its ability to ensure the correctness of the calculation. There is no obligation for SOLACTIVE – irrespective of possible obligations to ISSUERS – to advise third parties, including investors and/or financial intermediaries, of any errors in the INDEX. The publication of the INDEX by SOLACTIVE does not constitute a recommendation for capital investment and does not contain any assurance or opinion of SOLACTIVE regarding a possible investment in a financial instrument based on this INDEX.



1. INDEX SPECIFICATIONS

1.1. SCOPE OF THE INDEX

- The Solactive Green Bond EUR USD IG Index is a rules-based, market value weighted index engineered to mirror the investment grade green bond market.
- The index is comprised of investment grade rated green bonds denominated in EUR and USD and calculated as a Total Return Index denominated in EUR.

1.2. IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers:

Name	ISIN	Currency	Type	RIC	BBG ticker
Solactive Green Bond EUR USD IG	DE000SLA2514	EUR	TR	.SGREENIG	SGREENIG

*TR means that the INDEX is calculated as Total Return index as described in the Bond Index Methodology, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/bond-index-methodology/>

The INDEX is published on the website of the INDEX ADMINISTRATOR (www.solactive.com) and is, in addition, available via the price marketing services of Boerse Stuttgart GmbH and may be distributed to all of its affiliated vendors. Each vendor decides on an individual basis as to whether it will distribute or display the INDEX via its information systems.

Any publication in relation to the INDEX (e.g. notices, amendments to the GUIDELINE) will be available at the website of the INDEX ADMINISTRATOR: <https://www.solactive.com/news/announcements/>.

1.3. INITIAL LEVEL OF THE INDEX

The initial level of the INDEX on the START DATE is 100. Historical values from the LIVE DATE will be recorded in accordance with Article 8 of the BMR. Levels of the INDEX published for a period prior to the LIVE DATE have been back-tested.

1.4. PRICES AND CALCULATION FREQUENCY

The INDEX is calculated and distributed once every BUSINESS DAY based on the LAST EVALUATED MID PRICE of the INDEX COMPONENTS. Bonds added in a rebalancing (see Section 3) are included the INDEX at the EVALUATED ASK PRICE on the relevant REBALANCE DAY (as specified in Section 3). Weight increases are also considered at the ASK PRICE.



Should there be no current Evaluated Bid Price available on Intercontinental Exchange ("ICE") the most recent Evaluated Bid Price on Intercontinental Exchange ("ICE") for the preceding BUSINESS DAY is used in the calculation.

1.5. LICENSING

Licenses to use the INDEX as the underlying value for financial instruments, investment funds and financial contracts may be issued to stock exchanges, banks, financial services providers and investment houses by Solactive.



2. INDEX SELECTION

On each SELECTION DAY, all bonds which meet the INDEX COMPONENT REQUIREMENTS are eligible for inclusion in the INDEX and will be added as INDEX COMPONENT on the REBALANCE DAY. Additionally, on each SELECTION DAY, it will be evaluated whether all current INDEX COMPONENTS still meet the INDEX COMPONENT REQUIREMENTS. Each INDEX COMPONENT that does not meet the INDEX COMPONENT REQUIREMENTS will be removed from the INDEX on the next REBALANCE DAY.

2.1. SELECTION OF THE INDEX COMPONENTS

The initial composition of each INDEX, as well as any selection for a rebalance (as specified in Section 3) is determined using the following rules:

- Defined as Green bonds by the Climate Bonds Initiative
- Denominated as EUR or USD only
- Amount Outstanding of at least EUR 300 million and USD 300 million for bonds denominated in EUR and USD respectively
- Time to maturity of at least 12 months
- Exclude floating rate notes, inflation linked bonds, convertible bonds, US municipal bonds, ABS/MBS and other structured securities
- Only Investment Grade rated issues (based on the lowest available rating from S&P and Moody's). For Sovereign bonds, the issuer rating is used if the bond rating is unavailable.
- Private Placements are excluded. However, if a RegS version of the 144A Private Placement is or becomes available, then the RegS version is included
- The bond issuers are screened for ESG scores. The screening is done in the following areas
 - All the bonds are screened for ESG criteria using Sustainalytic's "UN Sanctions" or "Global Compact Compliance" screening:
 - Global Compact Compliance: If the issuer is classified by Sustainalytics as non-compliant, the bonds will be excluded. If the corporate issuer has no data available, the bonds of this issuer will be excluded.
 - Country UN Sanctions: If the issuer is classified by Sustainalytics as non-sanctioned issuers, the bonds of this issuer will be included.
 - If a government issuer is not covered by either UN sanctions or Global Compact Compliance, the bonds of this issuer will receive the UN Sanctions score of the issuer's country of incorporation
- A pricing must be available from the Pricing Provider



(the "INDEX COMPONENT REQUIREMENTS")

2.2. WEIGHTING OF THE INDEX COMPONENTS

The Index Components are weighted according to their respective Market Value in proportion to the aggregated Market Value of all Index Components in the index, whereas the following weighting constraints are applied:

- Corporate issuers are capped at 5%.
- Government issuers are capped at 10%.

3. REBALANCE

3.1. ORDINARY REBALANCE

In order to reflect the new selection of the INDEX COMPONENTS determined on the SELECTION DAY (in accordance with Section 2.1) the INDEX is adjusted on the REBALANCE DAY after CLOSE OF BUSINESS.

For more information on the rebalance procedure please refer to the Bond Index Methodology, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/bond-index-methodology/>.

SOLACTIVE will publish any changes made to the INDEX COMPONENTS with sufficient notice before the REBALANCE DAY on the SOLACTIVE webpage under the section "[Announcement](#)", which is available at <https://www.solactive.com/news/announcements/>

3.2. EXTRAORDINARY REBALANCE

In addition to the ordinary rebalance, the INDEX is also rebalanced extraordinarily. These adjustments take place outside the rebalancing schedule and follow different rules than the ordinary rebalances. The extraordinary rebalance is triggered by the mechanism described below:

- a) Full Tender or Early Redemption: The bond proceeds will be reinvested into the index on the effective date. For the avoidance of doubt a tender must be mandatory, the pure offer to tender a bond will not lead to an adaption of the index.*

On the effective date price and accrued interest are 0 and the proceeds (tender/redemption price + accrued interest/coupon) are considered as "Paid Cash" in the return formula. On the next



calculation day the bond is removed from the index and weightings are calculated according to the index formula. The new higher weightings of the remaining constituents imply the direct reinvestment of the redeemed bond into all other Index Components.

b) Exchange Offer:

- 1) optional exchange offers are not treated in the index;*
- 2) mandatory exchange offers: In case less than 90% of the amount outstanding is exchanged the exchange will not be considered in the index.
- 3) mandatory exchange offers: In case more than 90% of the amount outstanding is exchanged the exchange will be considered in the index calculation by exchanging the relevant bonds, so that the new bond will receive the weight of the old exchanged bond.

a. The capping factor of the new bond is calculated based on the following formula:

$$CapFactor_{t,new} = \frac{(Price_{t,old} + ACCInt_{t,old}) * Amount_{SD,old} * Cap_{SD,old}}{(Price_{t,new} + ACCInt_{t,new}) * Amount_{t,new}}$$

- c) Flat Trading: A bond is flat trading if the bond issuer will not meet its coupon payment obligation which means that the buyer of a bond is not responsible for paying the interest that has accrued since the last payment. If a bond is defined to be "flat trading" between two Rebalancing days the respective accrued interests and coupons will be set to 0. The bond will not be removed until the next adjustment date.
- d) Default: If the status of a bond changes to "In Default", the bond will remain as part of the index or portfolio at the last available evaluated price provided by the pricing source until the next regular index Rebalancing Day.
- e) Debt issuances: Debt issuances of an existing bond will not be considered until the next Rebalancing Day.

*For the avoidance of doubt, an optional tender or exchange offer may lead to an index adjustment after the end of the submission period. In case the tender or exchange has been successful for at least 90% of the Amount Outstanding, the bond will be removed from the index/exchanged into the relevant bond.



4. CALCULATION OF THE INDEX

4.1. INDEX FORMULA

The INDEX is calculated as a Total Return index.

The calculation is performed according to the Bond Index Methodology, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/bond-index-methodology/>.

A gross total return index seeks to replicate the overall return from holding an index portfolio, thus considering both coupon payments and Corporate Action proceeds in addition to the price changes adjusted for any accrued interest.

The direct reinvestment formula implies a daily reinvestment in the INDEX of proceeds resulting from corporate actions and coupon payments in respect of the INDEX COMPONENTS on the effective date of such events. The reinvestment will be undertaken proportionately to the weights of the INDEX COMPONENTS. The direct reinvestment index formula stipulates further that the level of the INDEX changes based on the change of the prices of its INDEX COMPONENTS taking into account their weight in the INDEX.

A more detailed description of the mechanics of the DIRECT REINVESTMENT formula can be found in the Bond index Methodology under Section 1.2.1, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/bond-index-methodology/>.

4.2. ACCURACY

The level of the INDEX will be rounded to four decimal places. Accrued Interest is calculated with settlement convention of each specific bond. If a bond does not pay any coupons (e.g. zero-coupon bonds or T-Bills) the Accrued Interest as well as the coupon payment will be set to 0.

4.3. ADJUSTMENTS

Under certain circumstances, an adjustment of the INDEX may be necessary between two regular REBALANCE DAYS. Basically, such adjustment is need to be made if a corporate action (as specified in Section 4.4 below) in relation to an INDEX COMPONENT occurs. Such adjustment may need to be done in relation to an INDEX COMPONENT and/or may also affect the number of INDEX COMPONENTS and/or the weighting of certain INDEX COMPONENTS and will be made in compliance with the Bond Index Methodology, which is available which is available on the SOLACTIVE website: <https://www.solactive.com/documents/bond-index-methodology/>.

4.4. CORPORATE ACTIONS

As part of the INDEX maintenance SOLACTIVE will consider various events – also referred to as corporate actions – which result in an adjustment to the INDEX between two regular REBALANCE DAYS. Such events have a material impact on the price, weighting or overall integrity of INDEX COMPONENTS. Therefore, they need to



be accounted for in the calculation of the INDEX. Corporate actions will be implemented from the cum-day to the ex-day of the corporate action, so that the adjustment to the INDEX coincides with the occurrence of the price effect of the respective corporate action.

Adjustments to the INDEX to account for corporate actions will be made in compliance with the Bond Index Methodology, which is available which is available on the SOLACTIVE website: <https://www.solactive.com/documents/bond-index-methodology/>. This document contains for each corporate action a brief definition and specifies the relevant adjustment to the INDEX variables.

While SOLACTIVE aims at creating and maintaining its methodology for treatment of corporate actions as generic and transparent as possible and in line with regulatory requirements, it retains the right in accordance with the Bond Index Methodology to deviate from these standard procedures in case of any unusual or complex corporate action or if such a deviation is made to preserve the comparability and representativeness of the INDEX over time.

Solactive considers following, but not conclusive, list of corporate actions as relevant for INDEX maintenance:

- > Early Redemption (an event that leads to a redemption of a bond before the regular maturity date)
- > Flat Trading (e.g. a bond ISSUER fails to meet its coupon payment obligation)
- > Bond Default (e.g. when the ISSUER fails to meet its coupon payment obligation or repay the principal at maturity)
- > Tender Offers (a holder of a bond is invited to tender the bond for a specific price at a specific time before the regular maturity date)
- > Exchange Offers (type of a tender offer where the ISSUER offers its bondholders to exchange their existing bonds for an asset other than cash)
- > Distressed Debt Exchange (form of debt exchange when bondholders agree to reduce the principal amount of debt securities in order to obtain higher payment priority in the form of secured debt)
- > Bond Funge (bond issue that is attached to an existing one (parent bond). On a defined date the parent bond absorbs the funged bond)
- > Payment-in-Kind Bonds (a situation where a bond pay interest in additional bonds rather than in cash)
- > Conversion of [CoCo] Bonds
- > Debt Issuance
- > Bond Maturity



4.5. RECALCULATION

SOLACTIVE makes the greatest possible efforts to accurately calculate and maintain its indices. However, errors in the determination process may occur from time to time for variety reasons (internal or external) and therefore, cannot be completely ruled out. SOLACTIVE endeavors to correct all errors that have been identified within a reasonable period of time. The understanding of "a reasonable period of time" as well as the general measures to be taken are generally depending on the underlying and is specified in the Solactive Correction Policy, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/correction-policy/>.

4.6. MARKET DISRUPTION

Market stress can arise due to a variety of reasons, but generally results in inaccurate or delayed prices for one or more INDEX COMPONENTS. The determination of the INDEX may be limited or impaired at times of illiquid or fragmented markets and market stress.



5. MISCELLANEOUS

5.1. DISCRETION

Any discretion which may need to be exercised in relation to the determination of the INDEX (for example the determination of the INDEX COMPONENTS or any other relevant decisions in relation to the INDEX) shall be made in accordance with strict rules regarding the exercise of discretion or expert judgement established by the INDEX ADMINISTRATOR.

5.2. METHODOLOGY REVIEW

The methodology of the INDEX is subject to regular review, at least annually. In case a need of a change of the methodology has been identified within such review (e.g. if the underlying market or economic reality has changed since the launch of the INDEX, i.e. if the present methodology is based on obsolete assumptions and factors and no longer reflects the reality as accurately, reliably and appropriately as before), such change will be made in accordance with the Methodology Policy, which is incorporated by reference available on the SOLACTIVE website: <https://www.solactive.com/documents/methodology-policy/>.

Such change in the methodology will be announced on the SOLACTIVE webpage under the Section "Announcement", which is available at <https://www.solactive.com/news/announcements/>. The date of the last amendment of this INDEX is contained in this GUIDELINE.

5.3. CHANGES IN CALCULATION METHOD

The application by the INDEX ADMINISTRATOR of the method described in this document is final and binding. The INDEX ADMINISTRATOR shall apply the method described above for the composition and calculation of the INDEX. However, it cannot be excluded that the market environment, supervisory, legal, financial or tax reasons may require changes to be made to this method. The INDEX ADMINISTRATOR may also make changes to the terms and conditions of the INDEX and the method applied to calculate the INDEX that it deems to be necessary and desirable in order to prevent obvious or demonstrable error or to remedy, correct or supplement incorrect terms and conditions. The INDEX ADMINISTRATOR is not obliged to provide information on any such modifications or changes. Despite the modifications and changes, the INDEX ADMINISTRATOR will take the appropriate steps to ensure a calculation method is applied that is consistent with the method described above.



5.4. TERMINATION

SOLACTIVE makes the greatest possible efforts to ensure the resilience and continued integrity of its indices over time. Where necessary, SOLACTIVE follows a clearly defined and transparent procedure to adapt index methodologies to changing underlying markets (see Section 5.2 "Methodology Review") in order to maintain continued reliability and comparability of the indices. Nevertheless, if no other options are available the orderly cessation of the INDEX may be indicated. This is usually the case when the underlying market or economic reality, which the INDEX is set to measure or to reflect, changes substantially and in a way not foreseeable at the time of inception of the INDEX, the INDEX rules, and particularly the selection criteria, can no longer be applied coherently or the INDEX is no longer used as the underlying value for financial instruments, investment funds and financial contracts.

SOLACTIVE has established and maintains clear guidelines on how to identify situations in which the cessation of the INDEX is unavoidable, how stakeholders are to be informed and consulted and the procedures to be followed for a termination or the transition to an alternative index. Details are specified in the Solactive Termination Policy, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/termination-policy/>.

5.5. OVERSIGHT

An oversight committee composed of staff from SOLACTIVE and its subsidiaries (the "OVERSIGHT COMMITTEE") is responsible for decisions regarding any amendments to the rules of the INDEX. Any such amendment, which may result in an amendment of the GUIDELINE, must be submitted to the OVERSIGHT COMMITTEE for prior approval and will be made in compliance with the Methodology Policy, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/methodology-policy/>.



6. DEFINITIONS

"AMOUNT OUTSTANDING" is the face value of the respective bond.

"BENCHMARK REGULATION" shall have the meaning as defined in Section "Introduction".

"BMR" shall have the meaning as defined in Section "Introduction".

"BUSINESS DAY" in relation to the index is each day, Monday to Friday, except banking holidays as defined by the Securities Industry and Financial Markets Association (SIFMA). With respect to the INDEX any day other than a Saturday or Sunday or a day on which the SIFMA recommends that the fixed income departments of its members be closed for the entire day for purposes of trading in U.S. government securities. The SIFMA holiday recommendations are set out on the following website (or any successor page): <http://www.sifma.org/services/holiday-schedule/>.

With respect to the INDEX is any day other than a day that is a TARGET2 closing day. The TARGET2 closing days are set out on the following website (or any successor page): https://www.ecb.europa.eu/press/pr/date/2000/html/pr001214_4.en.html.

"CLOSE OF BUSINESS" is a time stamp when an INDEX is calculated.

A "CREDIT EVENT" is the suspension of debt service, insolvency or failure to pay.

"EARLY REDEMPTION" includes every event that leads to a redemption of a bond before the actual maturity date.

"EXCHANGE OFFER" means that the holder of a bond is invited to exchange the existing bond to another debt security.

In particular, an "EXTRAORDINARY EVENT" is

- an early redemption of the bond
- a credit event

"FIXING TIME" is the time when the prices for the INDEX COMPONENTS are fixed for index calculation. [This is specified in the Bond Index Methodology, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/bond-index-methodology/>].

A bond is "FLAT TRADING" if the bond issuer does not meet its coupon payment obligation which means that the buyer of a bond is not responsible for paying the interest that has accrued since the last payment.

"FOREIGN EXCHANGE RATE" is the respective WM 4pm London fixing.

"GUIDELINE" shall have the meaning as defined in Section "Introduction".

A bond is "In Default" once the issuer is not able to fulfil its bond payment obligations anymore after the 30 days grace period.

"INDEX" shall have the meaning as defined in Section "Introduction".

"INDEX ADMINISTRATOR" shall have the meaning as defined in Section "Introduction".



"INDEX CALCULATOR" is SOLACTIVE or any other appropriately appointed successor in this function.

"INDEX COMPONENT" is each bond reflected in the INDEX.

"INDEX COMPONENT REQUIREMENTS" shall have the meaning as defined in Section 2.1.

"INDEX CURRENCY" is the currency specified in the column "Currency" in the table in Section 1.2.

"ISSUER" is the issuing entity of the respective bond.

"LAST EVALUATED ASK PRICE" the last available evaluated ask price by the designated PRICING PROVIDER.

"LAST EVALUATED BID PRICE" the last available evaluated bid price by the designated PRICING PROVIDER.

"LAST EVALUATED MID PRICE" is the average between LAST EVALUATED ASK PRICE and LAST EVALUATED BID PRICE.

"LIVE DATE" is 9th February 2017.

"OVERSIGHT COMMITTEE" shall have the meaning as defined in Section 5.5.

"PRICING PROVIDER" is Intercontinental Exchange ("ICE")

"REBALANCING DAY" is the last Business Day of each month.

"SELECTION DAY" is 5 BUSINESS DAYS before the scheduled REBALANCE DAY.

"SOLACTIVE" shall have the meaning as defined in Section "Introduction".

"START DATE" is 31st March 2014.

"Tender Offer" means that a holder of a bond is invited to tender the bond for a specific price at a specific time before the actual maturity date.

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