

INDEX GUIDELINE

Solactive Green ESG Bond EUR USD IG TR Index

Version 1

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INTRODUCTION

This document (the "Guideline") is to be used as a guideline with regard to the composition, calculation and maintenance of the Solactive Green ESG Bond EUR USD IG TR Index (the "Index"). Any amendments to the rules made to the Guideline are approved by the Index Committee specified in Section 5.5. The Index is owned, calculated, administered and published by Solactive AG ("Solactive") assuming the role as index administrator (the "Index Administrator") under the Regulation (EU) 2016/1011 (the "Benchmark Regulation" or "BMR"). The name "Solactive" is trademarked.

The Guideline and the policies and guidelines 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 ESG Bond EUR USD IG TR Index is a rules-based, market value weighted, total return index designed to mirror the investment grade green bond market of instruments denominated in Euro or U.S. Dollars after screening its issuers for ESG criteria. The index follows the same criteria as the Solactive Green Bond EUR USD IG Index, and applies an additional ESG screening based on scores provided by Sustainalytics. The underlying index is comprised of investment grade rated green bonds, as defined by the Climate Bond Initiative, denominated in EUR and USD and is calculated as a Total Return Index denominated in EUR. The additional ESG screening looks into the issuer's scores for the following areas:

- Fossil fuel involvement
- Nuclear energy involvement
- Controversial businesses
- Global Compact Compliance

Additionally, companies identified to belong to the Energy or Utilities sectors as defined by Solactive will not be eligible in the event that no ESG data is available or if the issuer is not covered by Sustainalytics research.

The Solactive Green ESG Bond EUR USD IG TR Index is selected 5 business days prior to Rebalance day and is rebalanced on a monthly basis.

1.2. IDENTIFIERS AND PUBLICATION

The Index is published under the following identifiers:

Name	ISIN	Currency	Type	RIC	BBG ticker	WKN
Solactive Green ESG Bond EUR USD IG TR Index	DE000SLA7P25	EUR	TR	.SGRESGIG	SGRESGIG Index	SLA7P2

The Index is published 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. In the event that data cannot be provided to the price marketing services of Boerse Stuttgart GmbH, the Index cannot be published.

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 1000. 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 Prices of the Index Components. Bonds added in a rebalancing (see Section 3) are included the index at the Last Evaluated Ask Price on the relevant Rebalance Day (as specified in Section 3.3). Bonds which are excluded from the Index in a rebalancing are reflected in the calculation of the level of the Index for the Rebalance Day at the Last Evaluated Mid Price on the relevant Rebalance Day. Index analytical values are calculated each Business Day using the Last Evaluated Mid Price based on Fixing Time. Prices of Index Components not listed in the Index Currency are converted using the WM 4pm Fixing quoted by Reuters.

Should there be no current spot foreign exchange rate available on Reuters, the most recent spot foreign exchange on Reuters [for the preceding Trading 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.

1.6. CONFLICTS OF INTEREST

There are no conflicts of interest identified for this index.

1.7. DEFINITIONS IN RESPECT OF SECTION 1

This section contains defined terms used in Section 1 and, if applicable, other Sections of the Guideline.

“Business Day” means any day other than a Saturday or Sunday and other than those days recommended as holidays by the Securities Industry and Financial Markets Association (SIFMA) for bond markets in the US or TARGET2 closing days. The SIFMA holiday recommendations are set out on the following URL (or any successor page): <https://www.sifma.org/resources/general/holiday-schedule/>. TARGET2 closing days are New Year’s Day, Good Friday, Easter Monday, Labour Day, Christmas Day and Boxing Day as outlined under: https://www.ecb.europa.eu/press/pr/date/2000/html/pr001214_4.en.html)



"Fixing Time" is 4pm EST for USD denominated securities and 4:15pm GMT for EUR denominated securities.

"Index Calculator" is Solactive or any other appropriately appointed successor in this function.

"Index Component" is each bond reflected in the Index.

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

"Last Evaluated Ask Price" the last available evaluated ask price by the designated Pricing Provider.

"Last Evaluated Mid Price" is the average between Last Evaluated Ask Price and Last Evaluated Bid Price.

"Last Evaluated Price" the evaluated Bid/Ask/Mid price by the designated Pricing Provider at Fixing Time.

"Launch Date" is the 7th of March 2019.

"Live Date" is the 7th of March 2019.

"Pricing Provider" is Interactive Data Corporation part of the ICE group.

"Start Date" is 31st of March 2014.



2. INDEX SELECTION

On each Selection Day, all bonds which meet the Index Component Requirements (as specified in Section 2.1) 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 (the "Index Component Requirements"):

- Instruments are defined as Green Bonds by the Climate Bonds Initiative
- Bonds are denominated in EUR or USD only
- Securities must have an amount outstanding of at least EUR 300 million or USD 300 million for bonds denominated in EUR or USD respectively
- The instrument time to maturity must be of at least 12 months from Rebalance Date
- Floating rate notes, inflation linked bonds, convertible bonds, US municipal bonds, ABS/MBS and other structured securities are excluded from the index
- Only securities for which the lowest available rating from Standard & Poor's or by Moody's Investors Service is Investment Grade. For Sovereign bonds, the issuer rating will be used if the bond rating is unavailable
- Private Placements are excluded. If a RegS version of the 144A Private Placement bond is or becomes available, the RegS version will be included
- An up-to-date price must be available on Selection Day by the Pricing Provider
- The bond issuers are screened for ESG scores. If issuers are not covered by Sustainalytics, bonds may be included unless the issuer belongs to the Energy or Utilities sectors. If Sustainalytics covers the issuer, but has no data available for the specific screening, bonds will be included unless the issuer belongs to the Energy or Utilities sectors. The screening is done in the following areas:
 - Fossil fuels involvement: bonds will be excluded if issued by companies with a significant ownership or an exposure of 5% and above to fossil fuels, considering extraction and/or power generation
 - Nuclear energy involvement: bonds will be excluded if issued by companies with a significant ownership or an exposure of 5% and above to the production, distribution or support of products related to Nuclear Energy.



- Controversial businesses: bonds will be excluded if issued by companies with a significant ownership or an exposure of 5% and above to controversial businesses. Retail companies should not have a revenue exposure to Alcoholic Beverages and Tobacco Products of 10% or greater. Issuers with any exposure to Military Contracting and Weapons, including Controversial Weapons and Small Arms will be excluded.
- Global Compact Compliance: bonds will be excluded if issued by non-compliant issuers following Sustainalytics classification.

The selection of the Index Components is fully rule-based and the Index Administrator has no discretion.

2.2. WEIGHTING OF THE INDEX COMPONENTS

On each Selection Day each Index Component is weighted using the market value based on the Last Evaluated Prices and accrued interest as on the Selection Day in order to achieve the aim of the Index. The weighting of the Index Components will be as follows:

- Corporate issuers may not have a weight greater than 5%
- Government issuers may not have a weight greater than 10%

2.3. DEFINITIONS IN RESPECT OF SECTION 2

This section contains defined terms used in Section 2 and, if applicable, other Sections of the Guideline.

"Fixed Coupon Bonds" are bonds with a coupon rate that is fixed throughout their life, as opposed to bonds with floating, or variable coupons.

"Floating Rate Notes" are bonds with a floating coupon rate, i.e. the coupon payments fluctuate in line with the underlying level of a pre-specified interest rate, as

"Inflation-linked Bonds" are bonds whose principal and coupon payments are indexed to inflation.

"Investment Grade" are all ratings of at least BBB- by Standard & Poor's and Fitch or Baa3 by Moody's Investors Service or BBB by DBRS.

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

"Selection Day" is 5 Business Days before the Rebalance Day.

"Step-Up Coupon Bonds" are bonds whose coupons increase while the bond is outstanding. The coupon amounts are determined at issuance.

"Zero Coupon Bonds" means bonds which do not pay interest but are issued at a discount.

"Fossil Fuels" refers to Thermal coal, Oil sands, Arctic oil, and Gas



"Controversial Businesses" refers to Gambling, Adult Entertainment, Alcoholic Beverages and Tobacco Products, Military Contracting, Weapons, Controversial Weapons and Small Arms.



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.

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](https://www.solactive.com/news/announcements/)", which is available at: <https://www.solactive.com/news/announcements/>.

3.2. EXTRAORDINARY REBALANCE

The Index is not rebalanced extraordinarily.

3.3. DEFINITIONS IN RESPECT OF SECTION 3

This section contains defined terms used in Section 3 and, if applicable, other Sections of the Guideline.

"Close of Business" is a time stamp when an Index is calculated. This occurs at 22:30 CET every Business Day.

"Rebalance Day" is the last business day of every month.



4. CALCULATION OF THE INDEX

4.1. INDEX FORMULA

The Index is calculated as a total return index.

A 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. Coupon and other cash payments will be reinvested on a monthly basis.

The standard index 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 standard index formula stipulates further that the Index Level changes based on the change of the prices of its Index Components taking into account their weight in the Index.

The formula is expressed in mathematical terms as follows:

$$Index_t = Index_{t-1} \cdot \left(1 + \sum_{i=1}^a (TotalReturn_{i,t} \cdot Weight_{i,t-1})\right)$$

4.2. ACCURACY

The Index Level will be rounded to 4 decimal places. The Amount Outstanding per bond instrument will be rounded to 0 decimal places.

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 of 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.

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 price effect of the respective corporate action taking effect.

Adjustments to the Index to account for corporate actions will be made in compliance with the 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 an 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)

4.5. RECALCULATION

Solactive makes the greatest possible efforts to accurately calculate and maintain its indices. However, errors in the index 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](https://www.solactive.com/documents/), which is incorporated by reference and available on the Solactive website: <https://www.solactive.com/documents/>.

4.6. MARKET DISRUPTION

In periods of market stress Solactive calculates its indices following predefined and exhaustive arrangements as described in the Solactive [Disruption Policy](https://www.solactive.com/documents/), which is incorporated by reference and available on the Solactive website: <https://www.solactive.com/documents/>. Such 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 Universe (if applicable), the selection of the Index Components (if applicable) or any other relevant decisions in relation to the Index) shall be in accordance with the Solactive's Discretion Policy, which is available at Solactive's website: <https://www.solactive.com/documents/>.

5.2. METHODOLOGY REVIEW

The methodology of the Index is subject to regular review. 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.

Such change in the Methodology will be announced on the Solactive webpage under the section "Announcements", which is available at address <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 Calculator of the method described in this document is final and binding. The Index Calculator 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 Calculator 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 Calculator is not obliged to provide information on any such modifications or changes. Despite the modifications and changes, the Index Calculator 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 an index may be indicated. This is usually the case when the underlying market or economic reality, which an 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 an 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 Termination Policy.

5.5. OVERSIGHT

An index committee composed of staff from Solactive and its subsidiaries (the "Index 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 Index Committee for prior approval and will be made in compliance with the "Solactive Methodology Policy".

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