

Guideline relating to

Solactive Green Bond Index

Version 4.2 dated November 1st, 2018



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This document contains the underlying principles and regulations regarding the structure and the operating of the Solactive Green Bond Index. Solactive AG shall make every effort to implement regulations. Solactive AG does not offer any explicit or tacit guarantee or assurance, neither pertaining to the results from the use of the index nor the index value at any certain point in time nor in any other respect. The Solactive Green Bond Index is the sole property of Solactive AG. Solactive AG strives to the best of its ability to ensure the correctness of the calculation. There is no obligation for Solactive AG – irrespective of possible obligations to issuers – to advise third parties, including investors and/or financial intermediaries, of any errors in the index. The calculation and publication of the index by Solactive AG is no recommendation for capital investment and does not contain any assurance or opinion of Solactive AG regarding a possible investment in a financial instrument based on this index.

Introduction

This document is to be used as a guideline with regard to the composition, calculation and management of the Solactive Green Bond Index. Any changes made to the guideline are initiated by the Committee specified in section 1.6. The Solactive Green Bond Index is the sole property of Solactive AG. The Solactive Green Bond Index is calculated and published by Solactive AG. The name "Solactive" is copyrighted.

1 Index specifications

The Solactive Green Bond Index is a rules-based, market value weighted index engineered to mirror the green bond market. The index is calculated as a Total Return Index denominated in USD.

1.1 Name and ISIN

The Solactive Green Bond Index is distributed under ISIN DE000SLA0FS4; the WKN is SLA0FS. The Index is published in Reuters under the code ".SOLGREEN" and in Bloomberg under the code "SOLGREEN Index".

1.2 Initial value

The index will be calculated every Business Day starting on 10th of March 2014. The index was based on 1000 as at the close of trading on 10th of March 2014.

1.3 Distribution

The Solactive Green Bond Index is published via the price marketing services of Boerse Stuttgart AG and is distributed to all affiliated vendors.

1.4 Prices and calculation frequency

The Solactive Green Bond Index is calculated based on the Evaluated Price (see 4.2 Further Definitions) of the respective index components. The index is calculated and distributed once every Business Day. In the event that data cannot be provided or that there are troubles regarding the price marketing of Solactive AG the index cannot be distributed.

1.5 Weighting

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 maximum weight is capped at 5% per bond. For the avoidance of doubt if less than 20 bonds are a component of the index, the cap at 5% per bond does not apply.

The weighting methodology may be amended by the Committee if required due to legal framework.

1.6 Decision-making bodies

A Committee composed of Solactive AG employees is responsible for decisions regarding the composition of the Solactive Green Bond Index as well as any amendments to the rules (hereinafter referred to as the "**Committee**" or the "**Index Committee**"). The Committee will also decide about the future composition of the Solactive Green Bond Index if any extraordinary event (see chapter 2.3) occurs and the implementation of any necessary adjustments.

Members of the Committee can recommend at any time changes to the composition of the Index or to the guideline and submit them to the Committee for approval.

1.7 Publication

All specifications and information relevant for calculating the index are made available on the <http://www.solactive.com> web pages and sub-pages.

1.8 Historical data

Historical data will be maintained from the 3rd of January 2012.

1.9 Licencing

Licences to use the index as the underlying value for derivative instruments are issued to stock exchanges, banks, financial services providers and investment houses by Solactive AG.

2 Composition of the Index

2.1 Selection of the Index Components

At the launch of the index, all financial instruments which meet the requirements of the Selection Pool are eligible for inclusion in the index. Instruments that will be issued prior to the Selection day and which meet the criteria of the Selection Pool as defined under 4.1 will be added on the monthly Adjustment Day to the Selection Pool. Additionally, on the monthly Selection Day, the Index Committee evaluates whether all current Index Components still meet the requirements of the Selection Pool and – if necessary – any Index Components which do not pass this screen are removed from the Selection Pool on the Adjustment Day.

Extraordinary adjustments are possible.

2.2 Ordinary adjustment

The composition of the index is ordinarily reviewed on the monthly Selection Day. Any change to the index will be implemented on the Adjustment Day.

2.3 Extraordinary adjustment

The Index Committee will decide about the future composition and the implementation of any necessary adjustments of the Solactive Green Bond Index if an extraordinary event (early redemption, credit event etc.) regarding one or more index constituents occurs.

The Index Committee will decide on the future composition of the Solactive Green Bond Index as well as the Business Day which marks the starting of the new adjusted index composition.

3 Calculation of the Index

3.1.1 Index formula

The Solactive Green Bond Index is an index whose value reflects the relative changes in bond values. Therefore, the composition and weighting is adjusted every month.

As a formula:

$$Totalreturn_{t,i} = \frac{Price_{t,i} + ACCInt_{t,i} + PaidCash_{t,i}}{Price_{t-1,i} + ACCInt_{t-1,i}} - 1$$

$$weighting_{t,i} = \frac{(Price_{t,i} + ACCInt_{t,i}) * Amount_{SD,i} * Cap_{SD,i}}{\sum_{i=1}^a (Price_{t,i} + ACCInt_{t,i}) * Amount_{SD,i} * Cap_{SD,i}}$$

$$Index_t = Index_{t-1} * (1 + \sum_{i=1}^a (Totalreturn_{t,i} * weighting_{t-1,i}))$$

Whereas:

<i>Totalreturn_{t,i}</i>	= Total return of the bond i on trading day t
<i>Pricereturn_{t,i}</i>	= Price return of the bond i on trading day t
<i>Index_t</i>	= Value of the index on trading day t
<i>Index_{t-1}</i>	= Value of the index on trading day t-1
<i>Price_{i,t}</i>	= Price of the bond i on trading day t
<i>Price_{i,t-1}</i>	= Price of the bond i on trading day t-1
<i>ACCInt_{i,t}</i>	= Accrued Interest of the bond i on trading day t
<i>ACCInt_{i,t-1}</i>	= Accrued Interest of the bond i on trading day t-1
<i>Weighting_{t,i}</i>	= weighting of the bond i on trading day t
<i>Amount_{SD,i}</i>	= Amount Outstanding of bond i on the last Selection Day SD
<i>Cap_{SD,i}</i>	= Capping Factor which helps to adjust the weights as defined under 1.5
<i>PaidCash_{t,i}</i>	= a) Value of the coupon payment for bond i on trading day t b) If a bond i will be removed from the index, the resulting payment of the bond will be included in the paid cash component

3.2 Accuracy

The value of the index will be rounded to four decimal places.

According to the terms of the bond, the Index Calculator will take the following conventions into account:

Act/Act

Act/360

Act/365

30/360

ISMA 30/360

The index does not take taxes into account and assumes gross coupon payments.

Accrued interests are calculated with settlement convention t+0. 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.

3.3 Adjustments

Indices need to be adjusted for systematic changes in prices once these become effective. The Committee will decide from time to time if the Solactive Liquid Green Bond Index (EUR) needs to be adjusted.

The following corporate actions will result in changes or adjustments to an index as indicated below between Adjustment Days:

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.*

Exchange Offer:

- 1) optional exchange offers are not treated in the index;*
- 2) 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; and
- 3) mandatory exchange offers: In case less than 90% of the amount outstanding is exchanged the exchange will not be considered in the index.

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 adjustment days the respective accrued interests and coupons will be set to 0. The bond will not be removed until the next adjustment date.

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 adjustment day.

Debt issuances of an existing bond will not be considered until the next adjustment 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 the full amount outstanding, the bond will be removed from the index/exchanged into the relevant bond.

4. Definitions

4.1 index-specific definitions

The **“Selection Pool”** comprises bonds that fulfill the following conditions:

- (a) Defined as Green bonds by the Climate Bonds Initiative
- (b) Amount Outstanding of at least 100 million USD
- (c) Time to maturity of at least six months.
- (d) Exclude inflation linked bonds, convertible bonds, US municipal bonds, ABS/MBS and other structured securities

4.2 Further definitions

“Adjustment Day” is the last Business Day of each month.

“Amount Outstanding” is the face value of the respective bond.

A **“Business Day”** in relation to the index is any day other than a Saturday or Sunday or a day on which the Securities Industry and Financial Markets Association (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. Business Days are set out on the following URL (or any successor page): <http://www.sifma.org/services/holiday-schedule/>

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

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.

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

The **“Index Calculator”** is Solactive AG or any other appropriately appointed successor in this function.

“Index Components” are all bonds in the Selection Pool.

The **“Index Currency”** is USD.

“Issuer” is the issuing entity of the respective bond.

“Last Evaluated Price” generally is (aside from the rules referred to in „Extraordinary Events“) the last available evaluated bid price.

“Selection Day” is a Business Day 5 Business Days prior to the Adjustment Day.

“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.

5 Appendix

5.1 Contact data

Information regarding the Solactive Green Bond Index concept

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5.2 Calculation of the Index – change 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, which he 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.