

INDEX GUIDELINE

Solactive Euro Corporate IG PAB Index

Version 1.9

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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 Euro IG Corporate IG PAB 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 INDEX is a rules-based index, engineered to measure the performance of Euro denominated investment grade corporate debt. The index provides exposure to a portfolio, which is based on ISS ESG climate analysis and is in line with a 1.5°C scenario through 2050. At the same time the index displays very similar credit and interest rate risk distributions compared to the Solactive Euro IG Corporate Index (BENCHMARK INDEX).
- To achieve the 1.5°C scenario, the weighted GROSS GHG EMISSIONS and GHG INTENSITY of the INDEX is reduced compared to the BENCHMARK INDEX.
- At the launch GROSS GHG EMISSIONS as well as GHG INTENSITY of the INDEX are reduced by a minimum of 50% compared to the Benchmark. Throughout the life of the index the GROSS GHG EMISSIONS as well as the GHG INTENSITY of the Index must always fulfill the SELF-DECARBONIZATION trajectory as well as the 50% reduction against the BENCHMARK INDEX.
- On a semi-annual basis, for the selection days in January and July, the GROSS GHG EMISSIONS and GHG INTENSITY of the index are reduced to be in line with a yearly SELF-DECARBONIZATION TRAJECTORY of at least 7%.
- The basis for SELF-DECARBONIZATION TRAJECTORY is the BASE DATE.

1.2. IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers:

Name	ISIN	Currency	Type	RIC	BBG ticker
Solactive Euro Corporate IG PAB Index	DE000SLOAYZ1	EUR	TR	.SOLEIGPAB	SOLEIPAB Index
Solactive Euro Corporate IG PAB GBP Index	DE000SLOCPY8	GBP	TR	.SOLEGGPAB	-
Solactive Euro Corporate IG PAB USD Index	DE000SLOCPZ5	USD	TR	.SOLEUGPAB	-

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 Börse 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 LIVE DATE is 1005.36. Historical values from the LIVE DATE will be recorded in accordance with Article 8 of the BMR.

1.4. PRICES AND CALCULATION FREQUENCY

The INDEX is calculated and distributed once every BUSINESS DAY based on the LAST EVALUATED BID PRICE 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 rebalance are reflected in the calculation of the level of the INDEX for the REBALANCE DAY at the LAST EVALUATED BID PRICE on the relevant REBALANCE DAY. INDEX analytical values are calculated each BUSINESS DAY using the LAST EVALUATED BID PRICE based on FIXING TIME. Prices of INDEX COMPONENTS not listed in the INDEX CURRENCY are converted using the WM 4 PM London Fixing quoted by Reuters.

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 AG.



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 by using the following rules:

- A price from the PRICING PROVIDER must be available for each INDEX COMPONENT on each SELECTION DAY
- All INDEX COMPONENTS must be a member of the BENCHMARK INDEX.

All bonds and their issuers are evaluated based on the criteria outlined in the table below. Bonds which do not comply with the screens are excluded from the INDEX. The evaluation is based on data provided by the ESG DATA PROVIDER:

Theme	Topic	Exclusion criterion
Norm-Based Research	Environment	Verified failure to respect established norms as well as severe or very severe controversies
	Human Rights	
	Corruption	
	Labour Rights	
Controversial Weapons Research	Chemical weapons	Verified or alleged ongoing involvement
	Biological weapons	
	Nuclear weapons	
	Depleted Uranium	
	Nuclear weapons outside the NPT	
	Cluster munitions	
Activity-Based Screening	Anti-personnel mines	
	Coal mining and power generation	$\geq 1\%$
	Fossil fuel production, exploration, distribution, and services.	$\geq 10\%$
	Electric power generation from fossil fuel sources	$\geq 50\%$
	Tobacco Cultivation & Production	$> 0\%$



Environmental Objectives	Sustainable Development Goal 12: Responsible Consumption and Production	Significant Negative Impact, i.e. single SDG Impact Rating of < -5.0
	Sustainable Development Goal 13: Climate Action	
	Sustainable Development Goal 14: Life Below Water	
	Sustainable Development Goal 15: Life on Land	

Explanation: % figures refer to revenue threshold (for degree of involvement)

The determination 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 an optimization algorithm which determines the optimal weights of each INDEX COMPONENT. The weights are set in such a fashion that the average GROSS GHG EMISSIONS of the INDEX is at its required level while all rating bucket, maturity bucket, sector bucket and turnover constraints are met. The constraints are defined as follows:

- Weighted GROSS GHG EMISSIONS must be equal or lower to the REGULATORY TARGET GHG EMISSIONS.
- Weighted GHG INTENSITY must be equal to the TARGET GHG INTENSITY.
- Maximum deviation from the BENCHMARK INDEX in further dimensions as follows:

Bucket	Deviation from BENCHMARK INDEX
Rating (AAA, AA+, AA, ..., BBB-)	+/- 2.5%
Maturity (1-5, 5-10, ... 25+ Years)	+/- 2.5%
Sector	+/- 2.5%
Issuer	+/- 1.25%
Bonds	+0.2% and -0.02%

- The maximum issuer weight must be smaller than 3%.



- Turnover – turnover is defined as two-way turnover. The turnover of the INDEX is limited to exceed the monthly turnover of the BENCHMARK INDEX by 5%. Turnover is calculated using all information as of SELECTION DAY.
- In case the optimization is unable to find a feasible result the constraints are loosened in the following order:
 - o Turnover constraint is widened to 7.5%
 - o Turnover constraint is widened to 10%
 - o Issuer deviation is widened to 2.5%
 - o Issuer absolute weight is widened to 4%
 - o Sector deviation is widened to 5%
 - o Turnover constraint is widened to 15%

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

3.2. EXTRAORDINARY REBALANCE

The INDEX is not rebalanced extraordinarily.



4. CALCULATION OF THE INDEX

4.1. INDEX FORMULA

The INDEX is calculated as a gross 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. Coupon and other cash payments will be reinvested on a monthly basis.

The periodic reinvestment formula implies a periodic reinvestment in the INDEX of proceeds resulting from corporate actions and coupon payments in respect of the INDEX COMPONENTS on the next regular REBALANCE DAY following such events. For the period until reinvestment the proceeds are held in a cash component. On the REBALANCE DAY the proceeds are reinvested in the INDEX proportionately to the weights of the INDEX COMPONENTS. The periodic reinvestment formula tracks the performance of the INDEX COMPONENTS relative to their market value on the immediately preceding REBALANCE DAY. The market value for an individual INDEX COMPONENT on a REBALANCE DAY is based on the price for the respective bond and its face value on the SELECTION DAY associated with the REBALANCE DAY.

A more detailed description of the mechanics of the periodic reinvestment formula can be found in the Bond index Methodology under Section 1.2.2, 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 2 decimal places.

4.3. ADJUSTMENTS

Under certain circumstances, an adjustment of the INDEX may be necessary between two regular REBALANCE DAYS. Basically, such adjustment needs 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 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

"BASE DATE" is 31/01/2022.

"BENCHMARK INDEX" is the Solactive Euro IG Corporate Index (SOLEUIGC).

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

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

"BUSINESS DAY" with respect to the INDEX each day Monday to Friday except common European banking holidays. Common European banking holidays are Good Friday, Easter Monday, Christmas Day, Boxing Day and New Year's Day.

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

"EFFECTIVE TIME TO MATURITY" is the minimum of the next call or put date and the final maturity date.

"ESG DATA PROVIDER" is ISS. For more information, please visit: <https://www.issgovernance.com/>.

"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/>.]

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

"GROSS GHG EMISSIONS" are the Greenhouse Gas Emissions of a company as provided by the ESG DATA PROVIDER. GROSS GHG EMISSIONS are updated annually.

"GHG INTENSITY" is a metric which is used to normalize GROSS GHG EMISSIONS across different companies. Normalization is done by dividing the GROSS GHG EMISSIONS of an issuer by the book value of equity and the book value of debt of the respective issuer. The book value of equity is floored at zero. The GHG INTENSITY metric is not adjusted for inflation.

"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.

"LIVE DATE" is 01.12.2020.



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

“PRICING PROVIDER” is the ICE.

“PRIVATE PLACEMENT” A private placement involves the sale of securities to a relatively small number of select investors. Investors targeted include wealthy accredited investors, large banks, mutual funds, insurance companies and pension funds.

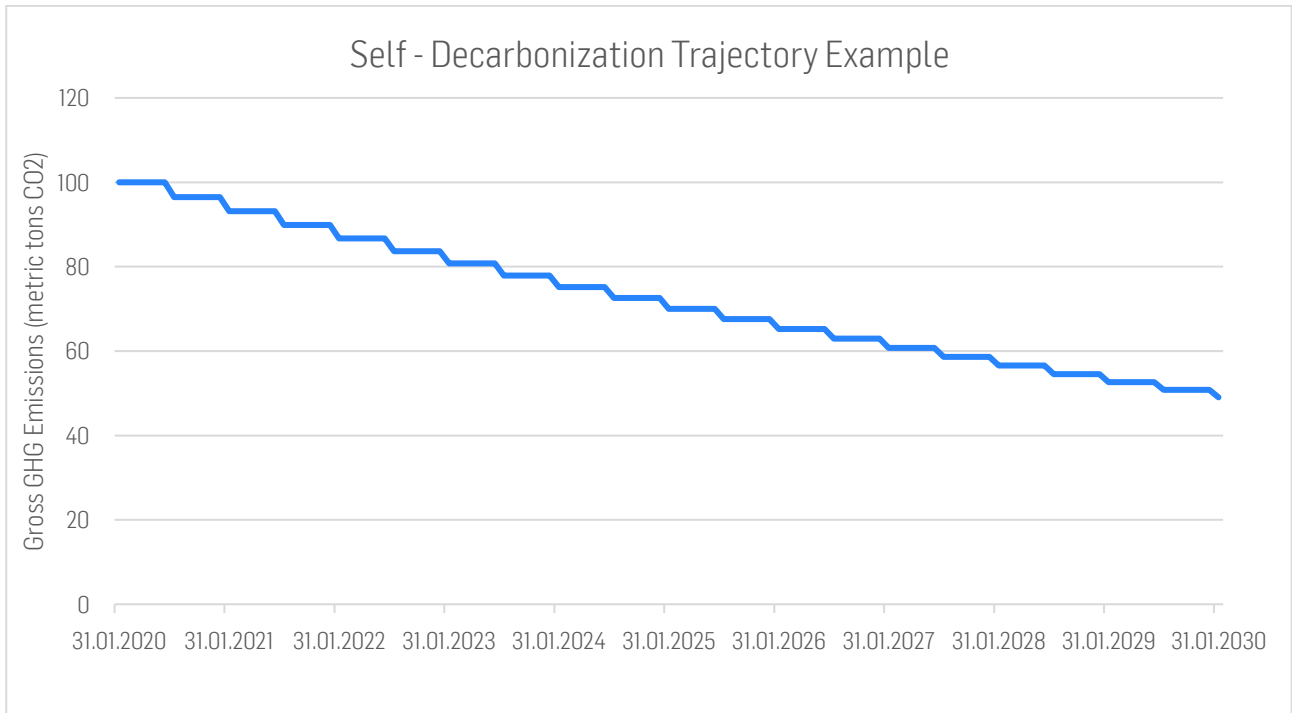
“REBALANCE DAY” is the last BUSINESS DAY of the month.

“REGULATORY TARGET GHG EMISSIONS” is the average emission level required. Until the first self-decarbonization this is a 50% reduction versus the BENCHMARK INDEX. In the following periods this is the minimum between the SELF-DECARBONIZATION TRAJECTORY or a 50% reduction versus the BENCHMARK INDEX.

“SELECTION DAY” is 3 BUSINESS DAYS before the scheduled REBALANCE DAY, disregarding any potential change of the REBALANCE DAY.

“SELF-DECARBONIZATION-TRAJECTORY”: The INDEX follows a self-decarbonization trajectory of at least 7% annually. The decarbonization trajectory is defined by an annual minimum Gross GHG Emissions / GHG Intensity reduction of 7% compared to the GROSS GHG EMISSIONS / GHG INTENSITY of the INDEX on the BASE DATE in a geometric progression. The 7% annual reduction is split into two 3.5% semi-annual reductions which become effective in the end of January and end of July.

In the following chart a hypothetical self-decarbonization trajectory for an Paris-aligned index with GROSS GHG EMISSIONS of 100 at the BASE DATE 31/01/2020 is shown. To be compliant with the self-decarbonization trajectory the Gross GHG Emissions of the hypothetical index must always be on or below the self-decarbonization trajectory.



“SOLACTIVE” shall have the meaning as defined in Section “Introduction”.

“SPOT” is the spot foreign exchange rate to convert the currency of the INDEX COMPONENT into the denomination of the INDEX CURRENCY.

“TARGET GHG INTENSITY” is the average GHG INTENSITY level required to fulfill the optimization constraint. Until the first self-decarbonization this is a 50% reduction versus the BENCHMARK INDEX. Otherwise this is the minimum between the SELF-DECARBONIZATION TRAJECTORY and a 50% reduction versus the BENCHMARK INDEX.



7. HISTORY OF INDEX CHANGES

Version*	Date	Description
1.7	24 August 2021	Historical changes are not specified
1.8	12 January 2022	Update of BASE DATE due to Scope 3 GHG emission measurement methodology change of the ESG DATA PROVIDER; for more background see the announcement at https://www.solactive.com/methodology-change-all-solactive-owned-administered-eu-climate-transition-benchmarks-and-eu-paris-aligned-benchmarks-based-on-institutional-shareholder-services-iss-data-effective-date-05-01-2/ .
1.9	27 July 2023	Adding two currency versions (USD & GBP)

**Versions prior to the first entry are historical.*

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