

**S&P Carbon Efficient  
Select Index Series  
*Methodology***

August 2020

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# Introduction

## Index Objective and Highlights

The S&P Carbon Efficient Select Index Series measures the performance of companies with relatively low greenhouse gas emissions in their respective underlying index by excluding those companies with the largest relative carbon-to-revenue footprints. Constituents' weights are optimized in order to limit the tracking error versus the underlying index.

## Index Series

The series currently contains the following indices:

- S&P 500 Carbon Efficient Select Index
- S&P Europe 350 Carbon Efficient Select Index
- S&P/TOPIX 150 Carbon Efficient Select Index

*For information on the S&P/TOPIX 150 Carbon Efficient Select Index please refer to the S&P/TOPIX 150 Fossil Fuel Free and Carbon Efficient Indices Methodology, available at [www.spdji.com](http://www.spdji.com).*

## Supporting Documents

This methodology is meant to be read in conjunction with supporting documents providing greater detail with respect to the policies, procedures and calculations described herein. References throughout the methodology direct the reader to the relevant supporting document for further information on a specific topic. The list of the main supplemental documents for this methodology and the hyperlinks to those documents is as follows:

Supporting Document	URL
S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology	<a href="#">Equity Indices Policies &amp; Practices</a>
S&P Dow Jones Indices' Index Mathematics Methodology	<a href="#">Index Mathematics Methodology</a>
S&P Dow Jones Indices' Float Adjustment Methodology	<a href="#">Float Adjustment Methodology</a>
S&P Dow Jones Indices' Global Industry Classification Standard (GICS) Methodology	<a href="#">GICS Methodology</a>

This methodology was created by S&P Dow Jones Indices to achieve the aforementioned objective of measuring the underlying interest of each index governed by this methodology document. Any changes to or deviations from this methodology are made in the sole judgment and discretion of S&P Dow Jones Indices so that the index continues to achieve its objective.

# Eligibility Criteria and Index Construction

## Index Universe

At each rebalancing, each index is constructed from the constituents of an underlying index as detailed below.

Index	Underlying Index
S&P 500 Carbon Efficient Select Index	S&P 500
S&P Europe 350 Carbon Efficient Select Index <sup>1</sup>	S&P Europe 350

For more information on an underlying index, please refer to its respective methodology document available at [www.spdji.com](http://www.spdji.com).

## Multiple Classes of Stock

All publicly listed multiple share class lines are eligible for index inclusion, subject to meeting the eligibility criteria. For more information regarding the treatment of multiple share classes, please refer to Approach A within the Multiple Share Classes section of the S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

## Constituent Selection

At each rebalancing the constituents of each underlying index are subjected to the following process, which incorporates each company's carbon-to-revenue footprint.

**GICS Sector Weight.** Within each GICS sector, constituents are ranked by carbon-to-revenue footprint. The 20% of companies in the underlying index with the highest carbon-to-revenue footprints, that do not reduce an individual sector's weight in the underlying index by more than 50% if removed, are removed from the eligible universe. In cases where the next company considered for exclusion reduces the sector weight beyond the 50% threshold, but not more than 55%, the company is excluded. If the next company considered for exclusion is in a sector which has already exceeded the 50% reduction threshold or reduces the sector weight beyond 55%, then the company remains eligible for index inclusion.

For more information on GICS, please refer to S&P Dow Jones Indices' GICS Methodology.

The remaining eligible constituents are selected for the respective index, and are then optimized to generate a final list of no more than 75% of the number of companies in the underlying index, with assigned weights intended to limit the tracking error versus the underlying index. This may result in the removal of companies where the weight is *de minimis*.

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<sup>1</sup> The index is used as the underlying index for the S&P Europe 350 Carbon Efficient Select Low Volatility Index.

## Constituent Weightings

**Constituent List Optimization.** At each rebalancing, no single constituent can have an index weight of less than 0.015% or more than 5% of the total index weight. Constituents are optimized using Northfield Information Service's optimization and risk model. The table below shows the final maximum number of constituents per index.

Underlying Index	Northfield Fundamental Risk Model (Optimizer)	Max. # of Companies After Optimization
S&P 500	U.S.	375
S&P EUROPE 350	Europe	262

For more information on the risk model, please visit [www.northinfo.com](http://www.northinfo.com).

**Carbon-to-Revenue Footprint.** The carbon-to-revenue footprint data used in the methodology is calculated by S&P Trucost Limited ("Trucost") and is defined as the company's annual greenhouse gas (GHG) emissions (direct and first tier indirect), expressed as metric tons of carbon dioxide equivalent (tCO<sub>2e</sub>) emissions, divided by annual revenues for the corresponding year, expressed in millions of US dollars. Trucost's annual research process evaluates the environmental performance of a given company with one output of this process being its annual greenhouse gas emissions profile.

For more information on Trucost's research process, please refer to Appendix I.

## Index Calculations

The index calculates by means of the divisor methodology used in all S&P Dow Jones Indices' equity indices.

For more information on index calculation, please refer to the Non-Market Capitalization Weighted Indices section of S&P Dow Jones Indices' Index Mathematics Methodology.

# Index Maintenance

## Rebalancing

The indices rebalance quarterly, effective after the close on the third Friday of March, June, September, and December. The rebalancing reference dates are the third Friday of February, May, August and November, respectively. Constituents' weights are calculated using closing prices on the Wednesday prior to the second Friday of the rebalancing month as the reference price. Index share amounts are calculated and assigned to each stock to arrive at the weights determined on the reference date. Since index shares are assigned based on the reference prices, the actual weight of each stock at the rebalancing differs from these weights due to market movements.

## Carbon-to-Revenue Footprint Updates

Each company's carbon-to-revenue footprint is researched annually, approximately eight months following the company's fiscal year end. Carbon-to-revenue footprints are updated on an as-needed basis following corporate events (mergers and acquisitions, spin-offs, etc.) and underlying data point revisions. Any update to a company's carbon-to-revenue footprint is applied at the subsequent quarterly rebalancing.

*For more information on Trucost's research process, please refer to Appendix I.*

## Additions and Deletions

**Additions.** Except for spin-offs, index additions are generally made only during rebalancings. A spin-off is added to all the indices of which the parent is a constituent at a zero price at the market close of the day before the ex-date (with no divisor adjustment). If the spun-off company is to remain in the underlying index, it remains in the index. If the spun-off company is removed from the underlying index after at least one day of regular way trading (with a divisor adjustment), it is removed from the index.

**Deletions.** Index constituents may be removed from the index following a takeover, merger, delisting, bankruptcy, indefinite suspension, or if dropped from the underlying index.

In the event that an index constituent is removed from the underlying index, it is also removed from the index and not replaced. As a result, the components of the index may differ slightly from those of the underlying index.

A constituent flagged by SAM's MSA may also be removed if the Index Committee determines that the company in question is no longer eligible for index inclusion.

## Media and Stakeholder Analysis Overlay

SAM uses RepRisk, a leading provider of business intelligence on environmental, social, and governance risks, for daily filtering, screening and analysis of controversies related to companies within the indices.

In cases where risks are presented, SAM releases a Media and Stakeholder Analysis (MSA) which includes a range of issues such as economic crime and corruption, fraud, illegal commercial practices, human rights issues, labor disputes, workplace safety, catastrophic accidents, and environmental disasters.

The Index Committee will review constituents that have been flagged by SAM's MSA to evaluate the potential impact of controversial company activities on the composition of the indices. In the event that the

Index Committee decides to remove a company in question, that company would not be eligible for re-entry into the indices for one full calendar year, beginning with the subsequent rebalancing.

For more information on RepRisk, please refer to [www.reprisk.com](http://www.reprisk.com). This service is provided for most of S&P Dow Jones Indices' Sustainability Indices and is not considered a direct contribution to the index construction process.

### **Currency of Calculation and Additional Index Return Series**

The indices calculate in U.S. dollars.

WM/Reuters foreign exchange rates are taken daily at 04:00 PM London time and used in the calculation of the indices. These mid-market fixings are calculated by the WM Company based on Reuters' data and appear on Reuters pages WMRA.

In addition to the indices detailed in this methodology, additional return series versions of the indices may be available, including, but not limited to: currency, currency hedged, decrement, fair value, inverse, leveraged, and risk control versions. For a list of available indices, please refer to [S&P DJI's All Indices by Methodology Report](#).

For information on the index calculation, please refer to S&P Dow Jones Indices' Index Mathematics Methodology.

For the inputs necessary to calculate certain types of indices, including decrement, dynamic hedged, fair value, and risk control indices, please refer to the Parameters documents available at [www.spdji.com](http://www.spdji.com).

### **Corporate Actions**

For general information on Corporate Actions, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

### **Other Adjustments**

In cases where there is no achievable market price for a stock being deleted, it can be removed at a zero or minimal price at the Index Committee's discretion, in recognition of the constraints faced by investors in trading bankrupt or suspended stocks.

### **Base Date and History Availability**

Index history availability, base dates, and base values are shown in the table below.

<b>Index</b>	<b>Launch Date</b>	<b>First Value Date</b>	<b>Base Date</b>	<b>Base Value</b>
S&P 500 Carbon Efficient Select Index	03/09/2009	09/17/2004	09/17/2004	100
S&P Europe 350 Carbon Efficient Select Index	08/28/2015	12/19/2008	12/19/2008	100

# Index Data

## Calculation Return Types

S&P Dow Jones Indices calculates multiple return types which vary based on the treatment of regular cash dividends. The classification of regular cash dividends is determined by S&P Dow Jones Indices.

- Price Return (PR) versions are calculated without adjustments for regular cash dividends.
- Gross Total Return (TR) versions reinvest regular cash dividends at the close on the ex-date without consideration for withholding taxes.
- Net Total Return (NTR) versions, if available, reinvest regular cash dividends at the close on the ex-date after the deduction of applicable withholding taxes.

In the event there are no regular cash dividends on the ex-date, the daily performance of all three indices will be identical.

For a complete list of indices available, please refer to the daily index levels file (“.SDL”).

*For more information on the classification of regular versus special cash dividends as well as the tax rates used in the calculation of net return, please refer to S&P Dow Jones Indices’ Equity Indices Policies & Practices Methodology.*

*For more information on the calculation of return types, please refer to S&P Dow Jones Indices’ Index Mathematics Methodology.*

# Index Governance

## **Index Committee**

An S&P Dow Jones Indices' Index Committee maintains the indices. The Index Committee meets regularly. All committee members are full-time professional members of S&P Dow Jones Indices' staff. At each meeting, the Index Committee reviews pending corporate actions that may affect index constituents, statistics comparing the composition of the indices to the market, companies that are being considered as candidates for addition to an index, and any significant market events. In addition, the Index Committee may revise index policy covering rules for selecting companies, treatment of dividends, share counts or other matters.

S&P Dow Jones Indices considers information about changes to its indices and related matters to be potentially market moving and material. Therefore, all Index Committee discussions are confidential.

S&P Dow Jones Indices' Index Committees reserve the right to make exceptions when applying the methodology if the need arises. In any scenario where the treatment differs from the general rules stated in this document or supplemental documents, clients will receive sufficient notice, whenever possible.

In addition to the daily governance of indices and maintenance of index methodologies, at least once within any 12-month period, the Index Committee reviews the methodology to ensure the indices continue to achieve the stated objectives, and that the data and methodology remain effective. In certain instances, S&P Dow Jones Indices may publish a consultation inviting comments from external parties.

*For information on Quality Assurance and Internal Reviews of Methodology, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.*

# Index Policy

## Announcements

All index constituents are evaluated daily for data needed to calculate index levels and returns. All events affecting the daily index calculation are typically announced in advance via the Index Corporate Events report (.SDE), delivered daily to all clients. Any unusual treatment of a corporate action or short notice of an event may be communicated via email to clients.

*For more information, please refer to the Announcements section of S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.*

## Pro-forma Files

In addition to the corporate events file (.SDE), S&P Dow Jones Indices provides constituent pro-forma files each time the indices rebalance. The pro-forma file is typically provided daily in advance of the rebalancing date and contains all constituents and their corresponding weights and index shares effective for the upcoming rebalancing. Since index shares are assigned based on prices prior to the rebalancing, the actual weight of each stock at the rebalancing differs from these weights due to market movements.

*Please visit [www.spdji.com](http://www.spdji.com) for a complete schedule of rebalancing timelines and pro-forma delivery times.*

## Holiday Schedule

The index calculates daily, throughout the calendar year. The only days the index is not calculated are on days when all exchanges where the index's constituents are listed are officially closed.

*A complete holiday schedule for the year is available at [www.spdji.com](http://www.spdji.com).*

## Rebalancing

The Index Committee may change the date of a given rebalancing for reasons including market holidays occurring on or around the scheduled rebalancing date. Any such change will be announced with proper advance notice where possible.

## Unexpected Exchange Closures

For information on Unexpected Exchange Closures, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

## Recalculation Policy

For information on the recalculation policy, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

*For information on Calculations and Pricing Disruptions, Expert Judgment and Data Hierarchy, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.*

## Contact Information

For questions regarding an index, please contact: [index\\_services@spglobal.com](mailto:index_services@spglobal.com).

# Index Dissemination

Index levels are available through S&P Dow Jones Indices' Web site at [www.spdji.com](http://www.spdji.com), major quote vendors (see codes below), numerous investment-oriented Web sites, and various print and electronic media.

## Tickers

The table below lists headline indices covered by this document. All versions of the below indices that may exist are also covered by this document. Please refer to [S&P DJI's All Indices by Methodology Report](#) for a complete list of indices covered by this document.

Index (Currency)	Return Type	Bloomberg	RIC
S&P 500 Carbon Efficient Select Index (USD)	Price Return	SPGRCUU	.SPGRCUU
	Total Return	SPGRCUUT	.SPGRCUUT
	Net Total Return	SPGRCUUN	.SPGRCUUN

## Index Data

Daily constituent and index level data are available via subscription.

For product information, please contact S&P Dow Jones Indices, [www.spdji.com/contact-us](http://www.spdji.com/contact-us).

## Web site

For further information, please refer to S&P Dow Jones Indices' Web site at [www.spdji.com](http://www.spdji.com).

# Appendix I - Trucost

## Trucost Environmental Register Research Process

1. **Map company business segments.** Trucost maps company business segments to more than 450 business activities in the Trucost model. The model is based on the North American Industry Classification System (NAICS), but goes into greater granularity in some areas, such as power generating utilities.
2. **Estimate data-modelled profile.** Once company business segments have been mapped to Trucost sectors and their share of revenue apportioned to each, Trucost is able to efficiently generate a data-modelled profile for the company. Trucost uses its environmentally extended input-output (EEIO) model to estimate data for over 800 environmental and operational metrics across the entire operations of companies; from the raw materials they depend on in their supply chains to the electricity they purchase to power their operations.
3. **Collect public disclosure.** Trucost searches for environmental performance information in annual reports, sustainability reports, websites, and other publicly disclosed sources. Third party datasets, like disclosures to the CDP<sup>2</sup>, are also reviewed. Trucost then standardizes reported environmental performance data to best practice guidelines so that it can be compared across companies, regions, and business activities. To correct errors in company reporting, data control procedures are applied, including sector specialist data reviews, automated outlier identifications and year-on-year comparisons. Wherever a material metric is not disclosed, Trucost uses the modelled value, to estimate the missing data fields.
4. **Engage with company.** Trucost then conducts an annual engagement with each company, providing the opportunity to verify environmental performance and provide additional information. Companies are further welcomed to contact Trucost analysts at any point in their environmental reporting cycle to provide their most recently available data. This supports Trucost's efforts to utilize the most up-to-date company information and to maximize data quality.

**Greenhouse Gas Emissions Data.** The indices use Trucost's greenhouse gas emissions data set. Quantities of greenhouse gas emissions are normalized by sales to calculate the company's carbon intensity, or "carbon-to-revenue footprint". The indices use direct and first-tier indirect emissions in the determination of the carbon-to-revenue footprints. For more information on these emissions scopes, and more, please refer to the [Trucost FAQ](#).

For more information on Trucost, please refer to [www.trucost.com](http://www.trucost.com).

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<sup>2</sup> CDP is a not-for-profit charity that surveys companies on Climate, Water, and Forestry issues and aggregates the collected disclosures. For more information see: <https://www.cdp.net/>.

# Appendix II – Methodology Changes

## Methodology Changes

Methodology changes since January 1, 2015 are as follows:

Change	Effective Date (After Close)	Methodology	
		Previous	Updated
Rebalancing Reference Dates	09/15/2017	The rebalancing reference dates are the last business day of February, May, August, and November, respectively.	The rebalancing reference dates are the third Friday of February, May, August, and November, respectively.
Intra-rebalancing Drop Treatment	09/16/2016	Companies involved in environmental crisis situations are not dropped from the index between rebalancings.	Any constituent raised as an environmental Media and Stakeholder Analysis (MSA) case by SAM will be brought to the governing Index Committee for possible immediate removal. In the event of removal, the constituent in question would not be eligible for re-entry into the index for one year beginning with the subsequent rebalancing.
Rebalancing Reference Date	11/30/2015	The index uses a forward-looking S&P 500 and S&P Europe 350 baskets to determine the selection universe.	The selection universe is as of the last business day of the month prior to the rebalancing month.
Treatment of Spin-Offs	11/30/2015	The spun-off company is added to all the indices of which the parent is a constituent, at a zero price at the market close of the day before the ex-date (with no divisor adjustment). The spun-off company will be removed after at least one day of regular way trading (with a divisor adjustment).	The spun-off company is added to all the indices of which the parent is a constituent at a zero price at the market close of the day before the ex-date (with no divisor adjustment). If the spun-off company is to remain in the parent universe index, it will subsequently remain in the corresponding Carbon Efficient Select Index. If the spun-off company is removed from the parent universe index after at least one day of regular way trading (with a divisor adjustment), the corresponding Carbon Efficient Select Index will follow the same treatment.
Treatment of Spin-Offs	09/30/2015	Spin-offs are generally not added to these Indices and there is no weight change to the parent stock. The price of the parent company is adjusted to the Price of the Parent Company minus (the Price of the Spun-off Company/Share Exchange Ratio). Index shares change so that the company's weight remains the same as its weight before the spin-off. There is no index divisor change. However, when the price of the spin-off is not known, the spun-off company is added to the index at a zero price. Once the spun-off company trades, the company is dropped from the index and the parent's index shares are adjusted so that the company's weight remains the same as the combined weight of parent and the spin-off, determined on the first day of trading.	The spun-off company is added to all the indices of which the parent is a constituent, at a zero price at the market close of the day before the ex-date (with no divisor adjustment). The spun-off company will be removed after at least one day of regular way trading (with a divisor adjustment).

Change	Effective Date (After Close)	Previous	Methodology Updated
S&P 500 Carbon Efficient Select Index:  Index Name	08/27/2015	Index name – S&P U.S. Carbon Efficient Index.	Index name – S&P 500 Carbon Efficient Select Index.

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