

**S&P Dow Jones
Indices**

A Division of **S&P Global**

**S&P/TSX Carbon
Efficient Index Series
*Methodology***

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Table of Contents

Introduction	3
Index Objective and Highlights	3
Supporting Documents	3
Partnership	3
Eligibility Criteria and Index Construction	4
Index Universe	4
Eligibility Screens	4
Multiple Classes of Stock	4
Constituent Selection	4
Constituent Weighting	5
Carbon-to-Revenue Footprint	7
S&P Carbon Global Standard Classification	7
Index Calculations	8
Index Maintenance	9
Rebalancing	9
Carbon-to-Revenue Footprint Updates	9
Controversies Monitoring	9
Additions and Deletions	9
Corporate Actions	10
Ongoing Maintenance	10
Currency of Calculation and Additional Index Return Series	10
Base Date and History Availability	10
Index Data	11
Calculation Return Types	11
Index Governance	12
Index Committee	12
Index Policy	13
Announcements	13
Pro-forma Files	13
Holiday Schedule	13
Rebalancing	13
Unexpected Exchange Closures	13

Recalculation Policy	13
Contact Information	13
Index Dissemination	14
Tickers	14
Index Data	14
Website	14
Appendix – Methodology Changes	15
Disclaimer	16

Introduction

Index Objective and Highlights

The S&P/TSX Carbon Efficient Index Series measures the performance of companies in a respective underlying index, excluding companies classified as high non-disclosing carbon emitters, while overweighting or underweighting those companies that have lower or higher levels of greenhouse gas (GHG) emissions per unit of revenue as defined in *Eligibility Criteria and Index Construction*. Constituents' weights are adjusted within each Global Industry Classification Standard (GICS)[®] Industry Group to reflect each company's relative carbon-to-revenue footprint. Each index also seeks to maintain the respective industry group weights of the underlying index, as of the rebalancing reference date.

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	Equity Indices Policies & Practices
S&P Dow Jones Indices' Index Mathematics Methodology	Index Mathematics Methodology
S&P Dow Jones Indices' Global Industry Classification Standard (GICS) Methodology	GICS Methodology

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.

Partnership

The S&P/TSX indices are calculated and managed by S&P Dow Jones Indices. The TMX Group Inc. (TMX) is the owner and distributor of all S&P/TSX equity index data.

Eligibility Criteria and Index Construction

Index Universe

At each rebalancing, each index is constructed from the constituents of an underlying index:

Index	Underlying Index
S&P/TSX Composite Carbon Efficient	S&P/TSX Composite
S&P/TSX 60 Carbon Efficient	S&P/TSX 60

For more information on an underlying index, please refer to its respective methodology document available at www.spglobal/spdji.com.

Eligibility Screens

As of the rebalancing reference date, the index universe for each index is screened for the following:

High Non-Disclosing Carbon Emitters. All companies classified, by S&P Trucost Limited (“Trucost”), as a ‘High Non-Disclosing Carbon Emitter’ are ineligible for index inclusion. Any company in an underlying index whose GHG emissions meet or exceed the threshold (the 100th highest ranked company by direct and first tier indirect GHG emissions in the S&P Global LargeMidCap), and which is not identified by Trucost as having sufficiently disclosed their GHG emissions as outlined in *Disclosure Status*, is classified as a high non-disclosing carbon emitter.

Liquidity. Non-constituents must satisfy the following:

Index	Three-Month Median Daily Value Traded (MDVT)
S&P/TSX Composite Carbon Efficient	CAD \$3 million
S&P/TSX 60 Carbon Efficient	--

Companies with fewer than three months MDVT data are evaluated over the available period.

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.

In the S&P/TSX Carbon Efficient Index Series, all multiple share class lines are assigned identical Carbon-to-Revenue Footprint Scores. All weight assignments are conducted at the company level.

Constituent Selection

As of each rebalancing reference date, the eligible companies in each universe are selected and form each index.

Constituent Weighting

For each index, as of the rebalancing reference date, constituent weight adjustments are made within each industry group to reduce the indices' overall exposure to GHG emissions per unit of revenue versus that of the underlying index. Each index seeks to maintain the respective GICS industry group weights of the underlying index as of the rebalancing reference date.¹

Constituent Weight in Carbon Efficient Index =

Constituent Weight in Carbon Efficient Industry Group x Underlying Index Industry Group Weight

To calculate each constituent's Carbon Efficient weight with respect to its industry group, the following steps are performed for each industry group:

1. Constituents' weights are calculated with respect to the eligible universe's industry group:

Constituent Weight in Carbon Efficient Industry Group (without Adjustment) =

$$\frac{\text{Constituent Float Market Cap.}}{\text{Eligible Universe Industry Group Float Market Cap.}}$$

2. Weights calculated in step 1 are adjusted according to their Carbon Weight Adjustment:

Constituent Weight in Carbon Efficient Industry Group =

$$\text{Constituent Weight in Carbon Efficient Industry Group (without Adjustment)} \times (1 + \text{Carbon Weight Adjustment})$$

The Carbon Weight Adjustment is determined by multiplying each company's Disclosure Status-specific Decile Weight Adjustment by its Industry Group Impact Factor, as detailed below:

			Industry Group Impact Factor		
			Low	Mid	High
			x0.5	x1	x3
Decile Classification ²	Disclosure Status	Decile Weight Adjustment	Carbon Weight Adjustment		
1st Decile	Disclosed	40%	20%	40%	120%
	Non-disclosed	30%	15%	30%	90%
2nd Decile	Disclosed	30%	15%	30%	90%
	Non-disclosed	20%	10%	20%	60%
3rd Decile	Disclosed	20%	10%	20%	60%
	Non-disclosed	10%	5%	10%	30%
4 th to 7 th Decile ³	Disclosed	10%	5%	10%	30%
	Non-disclosed	0%	0%	0%	0%
8th Decile	Disclosed	0%	0%	0%	0%
	Non-disclosed	-10%	-5%	-10%	-30%
9th Decile	Disclosed	-10%	-5%	-10%	-30%
	Non-disclosed	-20%	-10%	-20%	-60%
10th Decile	Disclosed	-20%	-10%	-20%	-60%
	Non-disclosed	-30%	-15%	-30%	-90%

3. Weights calculated in step 2 are adjusted to ensure each industry group's weights sum to 100%, as follows:

- If the sum of the weights after step 2 is greater than 100% then the first of the following steps capable of reducing the sum of the weights to 100% is performed:
 - Proportionally reduce the weights of stocks only in deciles 8 to 10
 - Proportionally reduce the weights of stocks only in deciles 7 to 10

¹ If the eligible universe contains fewer industry groups than the underlying index, then the weight of each underlying index's industry groups with eligible constituents are increased proportionally until the sum equals 100%.

² The deciles are defined using the S&P Carbon Global Standard. If any company's carbon to revenue footprint falls on the decile boundary threshold, it is assigned to the next decile.

³ Constituents without coverage by Trucost are assigned to this group ('Not-disclosed') to be treated neutrally by receiving a 0% carbon weight adjustment.

- Proportionally reduce the weights of stocks only in deciles 6 to 10
- Proportionally reduce the weights of all stocks
- If the sum of the weights after step 2 is less than 100% then the first of the following steps capable of increasing the sum of the weights to 100% is performed:
 - Proportionally increase the weights of stocks only in deciles 1 to 3
 - Proportionally increase the weights of stocks only in the 4th decile
 - Proportionally increase the weights of stocks only in the 5th decile
 - Proportionally increase the weights of all stocks

S&P/TSX 60 Carbon Efficient Index. For this index, if any industry group within a sector has fewer than two constituents, the weighting adjustment process attempts to maintain the respective GICS sector group weights of its underlying index, as of the rebalancing reference date, as follows:

$$\text{Constituent Weight in Carbon Efficient Index} = \text{Constituent Weight in Carbon Efficient Sector} \times \text{Underlying Index Sector Weight}$$

To calculate each constituent's Carbon Efficient weight with respect to its sector, the following steps are performed for each sector (essentially the same process from step 1 to 3 but performed at the sector level):

1. Constituents' weights are calculated with respect to the eligible universe's sector, as follows:

$$\text{Constituent Weight in Carbon Efficient Sector (without Adjustment)} = \frac{\text{Constituent Float Market Cap.}}{\text{Eligible Universe Sector Float Market Cap.}}$$

2. Weights calculated in step 1 are adjusted according to their Carbon Weight Adjustment, defined in the table above, as follows:

$$\text{Constituent Weight in Carbon Efficient Sector} = \text{Constituent Weight in Carbon Efficient Sector (without Adjustment)} \times (1 + \text{Carbon Weight Adjustment})$$

3. Weights calculated in step 2 are adjusted to ensure each sector's weights sum to 100%, as follows:
 - If the sum of the weights after step 2 is greater than 100% then the first of the following steps capable of reducing the sum of the weights to 100% is performed:
 - Proportionally reduce the weights of stocks only in deciles 8 to 10
 - Proportionally reduce the weights of stocks only in deciles 7 to 10
 - Proportionally reduce the weights of stocks only in deciles 6 to 10
 - Proportionally reduce the weights of all stocks
 - If the sum of the weights after step 2 is less than 100% then the first of the following steps capable of increasing the sum of the weights to 100% is performed:
 - Proportionally increase the weights of stocks only in deciles 1 to 3
 - Proportionally increase the weights of stocks only in the 4th decile
 - Proportionally increase the weights of stocks only in the 5th decile
 - Proportionally increase the weights of all stocks

Carbon-to-Revenue Footprint

For all indices, constituents within Trucost's coverage universe are assigned an annual carbon-to-revenue footprint, prior to the annual rebalancing reference date. The carbon-to-revenue footprint metric is calculated by Trucost, and is defined as a company's annual GHG emissions (direct and first tier indirect), expressed as metric tons of carbon dioxide equivalent (tCO₂e) emissions, divided by annual revenues for the corresponding year, expressed in millions of US dollars. At each annual rebalancing, the latest available carbon-to-revenue footprint data with a Trucost financial year of less than four years prior to the rebalancing reference date's year are used. Any carbon-to-revenue footprint data with a Trucost financial year of four years or more prior to the rebalancing reference date's year are considered as not covered.

For information on Trucost's methodology, please refer [here](#).

S&P Carbon Global Standard Classification

The S&P Carbon Global Standard is a unique classification system used to define the weighting adjustments for a given constituent. The standard considers each company's carbon-to-revenue footprint relative to, and the range of carbon-to-revenue footprints within, GICS industry group peers, using the S&P Global LargeMidCap as the reference group. The Standard also considers the quality of a company's GHG emissions disclosures.

The S&P Carbon Global Standard is recalculated during each annual rebalancing.

Decile Classification. As of the rebalancing reference date, decile thresholds are determined for each GICS industry group based on the carbon-to-revenue footprints of companies in the S&P Global LargeMidCap. These thresholds then serve as the global reference classifications for any company eligible for the indices into its S&P Carbon Global Standard decile, irrespective of its membership of the S&P Global LargeMidCap. The S&P Carbon Global Standard's decile ranges are published on the S&P DJI website following each annual rebalancing.⁴

Disclosure Status. Companies are further divided into those that have been identified by Trucost as having sufficiently disclosed their GHG emissions ("Disclosed") and those that have not ("Not Disclosed"). The "Disclosed" status is achieved when Trucost identifies companies as having full or partial disclosure in its GHG emissions scope (between scope 1 and 2) that is its largest in absolute terms. Companies identified by Trucost as having sufficiently disclosed their GHG emissions receive an additional 10% in their Decile Weight Adjustment.

Industry Group Classification. As of the rebalancing reference date, each industry group is identified as high, mid, or low impact. This classification is based on the range of carbon-to-revenue footprints across the companies within that industry group in the S&P Global LargeMidCap. The range for each industry group is calculated as the spread between its first and last decile threshold.

Industry groups are classified as follows:

- High impact = range > 500 (tCO₂e / revenue)
- Low impact = range ≤ 150 (tCO₂e / revenue)
- Mid impact = all remaining industry groups

The three components listed above are used to derive the Carbon Weight Adjustments used for constituent weighting in the indices through multiplying the Decile Weight Adjustment by the Industry Group Impact Factor.

⁴ <https://www.spglobal.com/spdji/en/landing/investment-themes/carbon-efficient/>.

Index Calculations

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

For more information on the index calculation methodology, 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 annually, effective after the close of the third Friday of March. The rebalancing reference date, and the reference universe for constituent selection, is the second Friday of February.⁵

Constituents' weights are calculated using closing prices on the rebalancing reference date. Index share amounts are calculated using closing prices on the Wednesday prior to the first Friday of the rebalancing month (reference prices) and are assigned to each stock to arrive at the weights determined on the rebalancing 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 annual rebalancing.

For information on Trucost's methodology, please refer [here](#).

Controversies Monitoring

Companies within the indices are monitored on a daily basis by RepRisk, a leading provider of business intelligence on environmental, social, and governance risks.⁶ RepRisk analyzes companies for related controversies, including 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. Using this data, each company is assigned a daily RepRisk Index (RRI) indicator. A company is defined as a risk if their RRI indicator is equal to or above 75.

If a company is reported by RepRisk to have violated the RRI indicator threshold of 75, the impacted company will be removed with a minimum of two business days' notice on a best efforts basis from when S&P Dow Jones Indices is notified of the violation. A company removed as a risk will only be considered for addition to the index on any future rebalancing date when it satisfies all the eligibility criteria and its RRI score has remained below 75 on all days since the previous year's rebalancing date.

For more information on RepRisk, please refer to www.reprisk.com. This service is not considered a direct contribution to the index construction process.

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 spin-off is to remain in the underlying index, it remains in the corresponding S&P/TSX Carbon Efficient index. If the spin-off is removed from the underlying index after at least one day of regular way trading (with a divisor adjustment), the spin is removed from the corresponding S&P/TSX Carbon Efficient index.

⁵ In 2020, due to market volatility, the rebalancing was delayed, and became effective after the close of the third Friday of June. The reference date was the third Friday of May.

⁶ For history prior to launch the controversies monitoring process was not applied to the indices.

Deletions. Index constituents may be removed from the index following a takeover, merger, delisting, bankruptcy, indefinite suspension or if dropped from the respective underlying index. Constituents removed from an underlying index are removed from the respective S&P/TSX Carbon Efficient index and not replaced.

Corporate Actions

Mergers and Acquisitions. In cases of mergers involving two index constituents, the merged company deemed to be the acquirer in the transaction remains in the index, provided it meets all eligibility requirements. If the acquisition payment type is stock-based, the acquirer's index shares increase proportionately to the terms of the transaction. If the acquisition payment type is not stock-based, the acquirer's index shares remain at pre-merger levels.

For more information on Corporate Actions, please refer to the Non-Market Capitalization Indices Section of S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

Ongoing Maintenance

Specific changes to index constituents, such as share changes, Investable Weight Factor (IWF) changes, dividend distributions, and price adjustments, follow the underlying index.

For more information on Share Updates, Float Adjustment and IWFs, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology and Float Adjustment Methodology.

Currency of Calculation and Additional Index Return Series

The indices calculate in Canadian and U.S. dollars.

WM/Refinitiv foreign exchange rates are taken daily at 04:00 PM London Time and used in the end-of-day calculation of the indices. These mid-market fixings are calculated by The WM Company based on Refinitiv data and appear on Refinitiv 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 the following: currency, currency hedged, decrement, fair value, inverse, leveraged, and risk control versions. For a list of available indices, please refer to the [S&P DJI Methodology & Regulatory Status Database](#).

For information on the calculation of different types of indices, 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.spglobal/spdji.com.

Base Date and History Availability

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

Index	Launch Date	First Value Date	Base Date	Base Value
S&P/TSX Composite Carbon Efficient Index	08/24/2020	03/20/2009	03/20/2009	100
S&P/TSX 60 Carbon Efficient Index	08/24/2020	03/20/2009	03/20/2009	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.

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 as well as their corresponding weights and index shares effective for the upcoming rebalancing.

Please visit www.spglobal/spdji.com for a complete schedule of rebalancing timelines and pro-forma delivery times.

Holiday Schedule

The indices are calculated daily, throughout the calendar year. The only days an index is not calculated are on days when all exchanges where an index's constituents are listed are officially closed or if WM/Reuters' exchange rates services are not published.

A complete holiday schedule for the year is available at www.spglobal/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 any questions regarding an index, please contact index_services@spglobal.com.

Index Dissemination

The TMX Group (TMX) serves as the distributor of both real-time and historical index data. In addition, index levels are available through S&P Dow Jones Indices' Web site at www.spglobal/spdji.com, through 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 the [S&P DJI Methodology & Regulatory Status Database](#) for a complete list of indices covered by this document.

Index (Currency)	Return Type	Bloomberg
S&P/TSX 60 Carbon Efficient Index (CAD)	Price Return	TSCE
	Total Return	TSCER
	Net Total Return	TSCEN
S&P/TSX 60 Carbon Efficient Index (USD)	Price Return	TSCEU
	Total Return	TSCEUR
	Net Total Return	TSCEUN
S&P/TSX Composite Carbon Efficient Index (CAD)	Price Return	XECE
	Total Return	XECER
	Net Total Return	XECEN
S&P/TSX Composite Carbon Efficient Index (USD)	Price Return	XECEU
	Total Return	XECEUR
	Net Total Return	XECEUN

Index Data

Daily constituent and index level data are available from the Toronto Stock Exchange on subscription. Please contact TMX Index Services via e-mail at Indexservices@tmx.com, or, for general inquiries, at DataSales@tmx.com.

For product information, please refer to the TMX Web site at www.tmx.com.

Website

For further information, please refer to S&P Dow Jones Indices' Web site at www.spglobal/spdji.com.

Appendix – Methodology Changes

Methodology changes since August 24, 2020, are as follows:

Change	Effective Date (After Close)	Previous	Methodology Updated
Carbon-to-Revenue Footprint	03/18/2022	At each annual rebalancing, the latest available carbon-to-revenue footprint data from Trucost are used.	<p>At each annual rebalancing, the latest available carbon-to-revenue footprint data with a Trucost financial year of less than four years prior to the rebalancing reference date's year are used.</p> <p>Any carbon-to-revenue footprint data with a Trucost financial year of four years or more prior to the rebalancing reference date's year are considered as not covered.</p>

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