



Calculation & Benchmark Administration by

**S&P Dow Jones  
Indices**

# **MAC Global Solar Energy Index**

## ***Methodology***

April 2023

The MAC Global Solar Energy Index ("Index") is proprietary to MAC, which has contracted with S&P DJI Netherlands B.V. (a subsidiary of S&P Dow Jones Indices LLC.) to calculate and administer the Index.

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# Introduction

## Index Objective

The MAC Global Solar Energy Index is a rules-based stock index that seeks to track the performance of companies in global solar energy businesses. The universe of companies that may be considered eligible for potential index inclusion is determined by S&P DJI based on factors such as a company’s business description and its most recent reported revenue by segment as described in Eligibility Criteria. S&P DJI uses search terms to identify those companies that place a degree of importance on solar business activities. The index applies exclusions based on a company’s involvement in specific business activities and includes minimum requirements for the S&P Global Governance and Economic Scores and the S&P Business Involvement Screens as outlined under Eligibility Criteria. The Index is a modified float-adjusted market-capitalization-weighted index subject to Solar Exposure Scores and other constraints as detailed herein.

The indices governed by this methodology document (“**Methodology**”) are administered and calculated by S&P DJI Netherlands B.V. (a subsidiary of S&P Dow Jones Indices LLC) (“**S&P DJI**” or the “**Index Administrator**”). Any changes to or deviations from this Methodology shall be made in the sole judgment and discretion of S&P DJI. The index owner is MAC Indexing, LLC (“MAC”).

The MAC Global Solar Energy Index was created and launched by MAC on 31-Mar-2008. From the launch of the Index until 24<sup>th</sup> of May 2021, the Index was administered and governed by MAC. S&P DJI assumed the role of benchmark administrator of the Index on behalf of MAC on 24<sup>th</sup> of May 2021

## Highlights

The Solar Stock Universe List is reconstituted once a year and the index is rebalanced quarterly, as of the close on the 3<sup>rd</sup> Friday of March, June, September, and December, or if such Friday is not an Index Business Day, the immediately following Index Business Day.

## Summary Description

Index Owner:	MAC Indexing, LLC (“MAC”)
Index Administrator & Calculation Agent:	S&P DJI Netherlands B.V. (“S&P DJI”)
Index Calculation and Publication:	The index level is calculated on each Index Business Day (subject to Index Policy) and published as soon as reasonably practicable thereafter.

## Supporting Documents

This Methodology is intended to be read in conjunction with supporting documentation that helps provide 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, are set forth below:

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>

# Eligibility Criteria

## Solar Stock Universe List

The first step is to create a Solar Stock Universe List. Once each year, with a Data Reference date of April 30, the Solar Stock Universe List is reconstituted consisting of solar stocks that are selected in accordance with the below eligibility criteria. For each subsequent quarterly index rebalance, stocks from the Solar Stock Universe List will be eligible for inclusion in the index. Only IPOs may be added to the solar stock universe at subsequent quarterly rebalances as noted further down.

## Solar Business Activities

Companies with revenue, or other relevant metric (see Index Construction below), from solar business activities of at least one-third of total revenue are selected for the Solar Stock Universe List. An algorithm is used to conduct an automated scan of company description and segment data as reported on S&P Capital IQ for relevant search terms to identify a universe of solar stocks. Only the securities of those companies identified in this step qualify for inclusion in the Solar Stock Universe List. Companies that do not include in their company description or segment data a reference to a product or business service that is explicitly related to a search term are excluded from the universe even if they may be identified as engaging in solar business activities through other sources. Examples of solar business activities include, but are not limited to:

- Solar power equipment producers including ancillary or enabling products such as tracking systems, inverters, batteries, or other solar energy storage systems
- Suppliers of raw materials, components, or services to solar producers or developers
- Companies that produce solar equipment fabrication systems
- Companies involved in solar power system installation, development, integration, maintenance, or finance
- Companies that produce hydrogen using solar energy
- Companies that provide solar-powered charging systems for electric vehicles or other electrical devices
- Companies selling systems that use solar thermal energy to produce heat or electricity
- Companies that sell electricity derived from solar power

## Country Inclusion Criteria

Stocks must be listed on a primary exchange in one of the countries as shown in Table 1. There is no limitation on the country where a company's headquarters or legal domicile may be located, which may differ from where a company's stock is listed as of the Data Reference Date.

Table 1

Country	Primary Exchange
Australia	Australian Stock Exchange
Austria	Wiener Bourse
Belgium	Euronext Brussels
Canada	Toronto Stock Exchange, TSX Venture Exchange
Denmark	NASDAQ Copenhagen
Finland	NASDAQ Helsinki
France	Euronext Paris
Germany	Xetra Stock Exchange
Hong Kong	Hong Kong Stock Exchange
Ireland	Irish stock exchange
Israel	Tel Aviv Stock Exchange
Italy	Borsa Italiana
Japan	Fukuoka Stock Exchange, Nagoya Stock Exchange, Tokyo Stock Exchange, Sapporo Stock Exchange
Luxembourg	Luxembourg Stock Exchange
Netherlands	Euronext Amsterdam
New Zealand	New Zealand Stock Exchange
Norway	Oslo Bors
Portugal	Euronext Lisbon
Singapore	Singapore Stock Exchange
South Korea	KOSDAQ Stock Exchange, Korean Stock Exchange
Spain	Mercado Continuo Espanol
Sweden	NASDAQ Stockholm
Switzerland	SWX Europe, Swiss Stock Exchange (SWX)
Taiwan	Taipei Exchange, Taiwan Stock Exchange
United Kingdom	London Stock Exchange, London Stock Exchange (IOB)
United States	NASDAQ, NYSE American, NYSE Arca, NYSE

Additionally, constituents must meet the following criteria for inclusion into the index.

**Security types**

Eligible securities for inclusion in the Index are common stocks, ADRs, GDRs, and REITs.

**Multiple Share Classes and Dual-Listed Companies**

Each company is listed once by the Designated Listing, chosen as the share class listed on an eligible exchange with both the highest float-adjusted market capitalization and 1-year median daily trading value.

**Liquidity Screens**

The minimum threshold for inclusion in the Solar Stock Universe List as of April 30 reference date is float-adjusted market capitalization of at least US\$ 75 million and a 3-month average daily trading value of at least US\$ 250,000.

**Business Activity Exclusions**

A stock shall be excluded from the Solar Stock Universe List at its annual reconstitution, and therefore from the index, if the company is engaged in the business of the extraction of coal, petroleum, or natural gas, or if the company is engaged in the business of generating electricity for sale to third parties using coal, petroleum (oil), or nuclear fuel, according to S&P Trucost Limited (Trucost) business activity data as noted in Table 2, as of the information reference date of April 30. If a stock is not covered by all the necessary Trucost data to test for exclusionary business activities, then the stock shall be included in the annual Solar Stock Universe List and therefore otherwise qualifies for inclusion in the index. Any IPOs or other stocks that may otherwise qualify to be added to the Solar Stock Universe List at the quarterly index rebalance shall be included in the Solar Stock Universe List if the stock does not have the necessary Trucost data coverage, but shall be excluded from the Solar Stock Universe List and the Index if the stock has Trucost data coverage and the Trucost data flags an excluded business activity as noted in Table 2.

Table 2: Environmental – Business Activity Exclusions		
Exclusion Type	Trucost Revenue Sectors	Revenue Threshold
Power Generation	Coal Power Generation	>0
	Petroleum Power Generation	
	Nuclear Power Generation	
Fossil Fuel Extraction	Crude Petroleum and Natural Gas Extraction	>0
	Bituminous Coal Underground Mining	
	Bituminous Coal and Lignite Surface Mining	

**Business Involvement Screens**

At each quarterly rebalance, stocks that fail the S&P Global Business Involvement Screens as of the quarterly Data Reference Date shall be excluded or dropped from the Index, whether that is an existing constituent or a stock that is being considered at the quarterly rebalance as a new addition to the Index. A stock shall fail the S&P Business Involvement Screens if the company has direct revenue exposure above zero percent of total company revenue, or ownership of 20% or more of another company that has direct revenue exposure above zero percent of total company revenue, in the involvement categories shown in Table 3. Any stock that does not have S&P Global Business Involvement Screen coverage data will be included in the Index if it otherwise qualifies. Any stock that has only partial coverage data will be assessed against the involvement categories where data is available; if it does not fail any of these categories it will be included in the Index if it otherwise qualifies. The S&P Global Business Involvement Screens shall be applied only at quarterly rebalances, not at the annual reconstitution of the Solar Stock Universe List.

Table 3: Business Involvement Exclusion Screens			
Exclusion Type	S&P Global Involvement Type	Direct Revenue Threshold (percent of total company revenue)	Indirect Ownership Threshold



Consumer Products & Services	Adult Entertainment (Production; Retail and Distribution)	> 0%	>= 20%
	Alcohol (Production; Related Products and Services; Retail and Distribution)	> 0%	>= 20%
	Gambling (Specialized Equipment; Operations; Supporting Products and Services)	> 0%	>= 20%
	Tobacco (Production; Related Products and Services; Retail and Distribution)	> 0%	>= 20%
Defense & Weapons	Anti-Personnel Mines (Customized Weapons; Related Products and Services)	> 0%	>= 20%
	Biological and Chemical Weapons (Customized Weapons; Related Products and Services)	> 0%	>= 20%
	Blinding Laser Weapons (Customized Weapons; Related Products and Services)	> 0%	>= 20%
	Cluster Munitions (Customized Weapons; Related Products and Services)	> 0%	>= 20%
	Depleted Uranium (Customized Weapons; Related Products and Services)	> 0%	>= 20%
	Incendiary Weapons	> 0%	>= 20%
	Military Contracting - Integral Military Weapons	> 0%	>= 20%
	Military Contracting - Weapons Related	> 0%	>= 20%
	Nuclear Weapons (Customized Weapons; Related Products and Services)	> 0%	>= 20%
	Small Arms (Production of Small Arms Weapons for Non-Civilian Use; Retail and Distribution of Small Arms Weapons; Production of Key Components; Production of Small Arms Weapons for Civilian Use)	> 0%	>= 20%
Energy & Fossil Fuels	Artic Drilling (Extraction and/or Production)	> 0%	>= 20%
	Coal (Metallurgical Coal Mining; Thermal Coal Mining; Manufacturing Coal Products)	> 0%	>= 20%
	Nuclear (Transmission and Distribution; Generation; Supporting Products and Services)	> 0%	>= 20%
	Oil Sands or Tar Sands (Extraction and/or Production)	> 0%	>= 20%

	Shale Oil and Gas (Extraction and/or Production)	> 0%	>= 20%
	Thermal Coal (Transmission and Distribution; Generation; Supporting Products and Services)	> 0%	>= 20%
	Ultra Deep Sea Drilling (Extraction and/or Production)	> 0%	>= 20%

For more information on Business Involvement Screening, please refer [here](#)

### Governance Screen

At each quarterly rebalance, stocks with an S&P Global Governance & Economic Score of less than 5.00, as of the quarterly Data Reference Date shall be excluded or dropped from the Index, whether that is an existing constituent or a stock that is being considered at the quarterly rebalance as a new addition to the Index. Any stock that does not have an S&P Global Governance & Economic Score due to lack of coverage by S&P Global shall be excluded or dropped from the Index until that Score becomes available. Any IPOs or other stocks that may qualify to be added to the Solar Stock Universe List at the quarterly rebalance shall not be added to the Index as a constituent if the stock does not have an S&P Global Governance and Economic score, or if the stock has a current S&P Global Governance & Economic score of less than 5.00. The screen for the S&P Global Governance & Economic Score shall be applied only at quarterly rebalances, not at the annual reconstitution of the Solar Stock Universe List.

### Calculating the Solar Exposure Scores

Companies that derive approximately two-thirds to 100% of their revenue, or other relevant metric as described below, from solar business activities are assigned a Solar Exposure Score of 1.0. Companies that derive between approximately one-third and two-thirds of their revenue, or other relevant metric as described below, from solar business activities are assigned a Solar Exposure Score of 0.5. Companies that derive less than approximately one-third of their revenue, or other relevant metric as described below, from solar business activities are excluded from consideration for inclusion in the Index. Solar Exposure Scores are assigned at the annual index reconstitution of April 30. Solar Exposure Scores are typically based on information provided in a company's most recent annual report as of the information reference date of April 30, although other company information sources may be used if necessary.

Segment revenue is the primary metric used to determine a company's solar business activity exposure, but if a company does not report a solar revenue breakdown, then other metrics may be used for determining solar exposure, with an order of preference of EBITDA, net income, earnings, cash available for distribution (CAFD), cash flow, balance sheet assets, portfolio holdings, or solar electricity capacity or production in energy terms.

A company shall be excluded from the Solar Stock Universe List at the annual reconstitution if that company does not provide sufficient publicly-available information for a determination to be made of

whether the company derives more than approximately one-third of its revenue, or other relevant metric stated above, from solar business activities.

### **IPOs**

An algorithm is used to search company description and segment data as reported by S&P Capital IQ to identify IPOs. Stocks that are not in the group identified by the search algorithm will not be included in the index even if that company may be identified as engaging in solar business activities through other sources. As of the Data Reference Date at each quarterly rebalance, a company that recently completed an initial public offering, a direct public offering, or a reverse merger of a private company into a publicly-traded company is considered for addition into the Solar Stock Universe List if it meets the following criteria:

- 1) The stock has at least two months of trading history prior to the Data Reference Date. This trading history requirement does not apply to companies that were spun off from an existing Index constituent.
- 2) The stock satisfies all the eligibility criteria listed under Solar Stock Universe List, with an exception for stocks with less than three months of trading history listed below.

If a stock considered for addition into the Solar Stock Universe List under this section has traded for less than three months, then the minimum average daily trading value shall be for the number of days that the stock has actually traded, rather than the normal 3-month period specified in the Liquidity Screens section above. For a reverse merger, the trading value day count shall begin on the day that the merger takes effect.

# Index Construction

## Minimum number of stocks

The index shall seek to have 20 or more constituent stocks. If there is a risk of the number of stocks falling below 20, the eligibility criteria for the inclusion of a constituent in the Index shall be relaxed as specified in the Liquidity Screens section.

## Liquidity Screens

The minimum threshold for initial inclusion of a stock in the Index is US\$ 250 million of float-adjusted market capitalization and a 3-month average daily trading value of US\$ 750,000 as of the quarterly Data Reference Date, which is the market close on the first business day of March, June, September, and December. The minimum threshold for the continued inclusion of a constituent in the index at the quarterly index rebalance is US\$ 125 million of float-adjusted market capitalization and a 3-month average daily trading value of \$375,000 as of the quarterly Data Reference Date, which is the first business day of March, June, September, and December. If this leads to the Index stock count dropping under 20 stocks, the minimum thresholds for initial and continued inclusion shall be relaxed such that the 20-stock minimum can be met by progressively adding otherwise eligible stocks from the annual Solar Stock Universe list in the order of the stocks with the highest float-adjusted market capitalization first. If there are no eligible stocks to choose from, the stocks identified to be dropped will be retained in the index to meet the 20-stock minimum rule.

## Stock weights

At each quarterly Index rebalance, the index is rebalanced according to the following weighting methodology:

- The new rebalance weights are determined as of the reweighting reference date, which is the market close on the first business day of the rebalance month (i.e., March, June, September, and December) before the index rebalance's effective date of the third Friday in March, June, September, and December. The stocks in the index are first assigned a raw weight based on a standard float-adjusted market capitalization weighting scheme, with any stock having a Solar Exposure Score of 0.5 first having its float-adjusted market capitalization multiplied by 0.5 to reduce its raw weight by half.
- If necessary, the raw weighting factors are modified through a weighting-gap rebalancing algorithm to ensure that, at the time of the reweighting reference date, a Diversification Rule applies such that the aggregate weighting of securities in the index with individual weightings of more than 4.5% is no more than 45.0% of the total index. The weight of each individual stock is capped at 10%, with any excess weight distributed pro-rata to the other stocks in the index. The weighting-gap rebalancing algorithm progressively reduces the weighting gap between adjacent securities, as ranked by their raw weighting factors, on a proportional basis, until the weighting parameters specified above are met. If the algorithm is unable to produce a result that meets the Diversification Rule, then the weighting outcome that is available with the lowest total weight of stocks above 4.5% will be used, and the Diversification Rule will be relaxed so that the total weight of stocks over 4.5% can exceed 45% for that quarterly index rebalance.

- The index shall also seek to meet a rule (**70% Minimum Liquidity Rule**) that constituent stocks, that in the aggregate account for at least 70% of the weight of the index, each shall have a minimum global monthly trading volume of 250,000 shares, or minimum global notional volume traded per month of US\$ 25,000,000, averaged over the last six months. If this rule is not met, then individual stocks that do not meet this rule shall be progressively dropped from the index beginning with the stocks that have the smallest trading volume, until the rule is met, subject to the constraint that the number of the stocks in the index shall not drop below 20.
- The index follows an "**80% investment policy**" whereby at least 80% of the combined weight of the index constituents shall be represented by companies that derive at least 50% of their revenue, from solar business activities. In order to comply with this policy, if necessary, stocks with less than 50% solar revenue will not be initially included in the index, and if still necessary, stocks with less than 50% solar revenue will be progressively dropped from the index in the order of the smallest float-adjusted market capitalization stocks first, until the policy requirement is met, subject to the constraint that the number of stocks in the index shall not drop below 20.

The stock weights will always be determined to satisfy the constraints specified in the following order: Minimum number of stocks in the index, the Diversification Rule, the 70% Minimum Liquidity Rule, and the 80% investment policy.

# Index Maintenance

## Index Calculations

The indices are calculated using a divisor methodology. Index calculations include price series, and net total return series.

The indices are calculated using S&P DJI's modified market cap weighted methodology. A modified market cap weighted index is one where index constituents have a user-defined index weight. Each stock's weight is based on the optimized weight and is calculated as described under the Index Construction section.

*Please refer to S&P DJI's Index Mathematics Methodology for further details on the modified market cap methodology.*

## Rebalancing

The MAC Global Solar Energy Index is rebalanced on a quarterly basis as of the close of the 3rd Friday of in March, June, September, and December. The Index Committee at each quarterly rebalance will (1) determine any new additions or deletions of Index constituents, and (2) implement a rebalancing of the constituent weights as defined by the methodology herein.

To determine new index constituents and deletions and to rebalance index constituent weights, the Index Committee at each quarterly index rebalance will add to the annual Solar Stock Universe List any solar-company IPOs, direct listings, or reverse mergers that took place since the last review and that otherwise meet the eligibility criteria. Also, any new stock for inclusion in the index shall first be reassessed with the latest available information to determine the percentage of its solar business activities, and if that percentage is below one-third of total revenue or other relevant metric, it shall not be included in the index and shall be dropped from the Solar Stock Universe List. At the June quarterly review, the Index Committee will implement the new annual Solar Stock Universe List that was compiled with information that was current as of the reference date of April 30.

After any revisions are made to the Solar Stock Universe List, then stocks are added to or deleted from the index using the Solar Stock Universe List and the eligibility requirements for the minimum float-adjusted market cap and average daily trading value, subject to the other methodology constraints defined herein.

Proforma data will be generated starting as of the Reference Date, ie: the close of the second Friday of the relevant Rebalance month, based on data as of the market close on the first business day of the relevant rebalance month (i.e., March, June, September, and December)

- The **"Data Reference Date"** is as of the market close on the first business day of the relevant rebalance month (i.e., March, June, September, and December)
- The **"Rebalancing Reference Date"** or **"Reference Date"** for weighting occurs as of the close of the second Friday of the relevant Rebalance month and if such day is not a business day then the immediately following Business Day.

- The “**Rebalancing Effective Date**” or “**Rebalancing Date**” is after the close of the third Friday of the Rebalance Month effective at next day market open, or if such Friday is not an Index Business Day, the immediately following Index Business Day.
- The “**Rebalance Month**” is March, June, September, and December.

Stocks are assigned index shares and rebalance weights using the closing prices as of the Reference Date. Because index shares are assigned based on prices a number of days prior to the Rebalancing Date, the actual weight of each stock at the Rebalancing Date differs from its Final Stock Weight due to market movements.

### Additions and Deletions

Except for spin-offs, companies can only be added to an index during the rebalancing. Between Rebalancing Dates, deletions can occur due to acquisitions, mergers and spin-offs, or due to bankruptcies or suspensions. As the indices do not have a fixed number of constituents, additions to and deletions from an index may not be equal in number.

### Corporate Actions

Between two Rebalancing Dates the maintenance of index constituents is based on the following principle: all share and price adjustments that do not alter the membership of stocks in the universe or their risk characteristics do not lead to changes in the index value or composition. The section below details the maintenance rules for the most common corporate actions. If not explicitly mentioned in this document, index maintenance will follow the same principles as those for the Reference Benchmark Index.

Corporate Action	Adjustment Made to Index	Divisor Adjustment?
Stock Split, Forward/Reverse	Market capital neutral treatment, share change offset by price adjustment	No
IWF Change	IWF changes do not affect index market capitalization as the AWF will adjust to negate any IWF changes	No
Share Issuance	Share changes do not affect index market capitalization as the AWF will adjust to negate any share changes	No
Rights Offering	If the rights are in the money, the spot price of the underlying security will be adjusted after market close of the day prior to the ex-date and the index shares of the underlying security will adjust to offset the price adjustment thus making the event a market cap neutral event.	No
Special Dividend	Price adjustment will be applied after market close on ex-date minus 1	Yes
Delisting	The delisted security will be deleted from the index (at either the last traded price of a zero price).	Yes
Spin-off (Add Spin-Off)	S&P DJI practice is to follow a zero price spin off treatment. No Price Adjustment applied to the parent, the spinoff company is added to the index at price of zero and at the terms of the spin-off so it is market capitalization neutral on the ex-date (no divisor change). The spun-offs are added to the index. In the event that S&P DJI applies the event as a non-ZPSO event, the spun-off company is added to the index with respect to spinoff	No



	ratio. The spot price of the underlying security is adjusted after market close of the day prior to the ex-date by the closing spot price of the spun-off company multiplied by the spin-off ratio, thus making it a market cap neutral event. The divisor will not be adjusted.	
M&A (constituent acquired for cash)	The acquired company is deleted from the index.	Yes
M&A (constituent acquired by another constituent for stock and or cash and stock)	The acquired company is deleted from the index. The shares outstanding and IWF of the acquirer will be adjusted with respect to the stock terms of the acquisition.	Yes

For more information on Corporate Actions, please refer to S&P DJI's Equity Indices Policies & Practices.

A distribution by an existing Index constituent to its shareholders of a publicly-traded spin-off will automatically be included in the Index initially, but will be dropped from the Index at the next quarterly review if the spun-off company does not meet the standard Index constituent criteria. The average daily trading value for testing whether a spin-off should remain in the Index shall be for the number of days the spin-off has actually been trading, which is likely to be less than the normal 3-month period specified in the Liquidity Screens section. The parent company that conducted the spin-off will also be reevaluated at the next quarterly Index rebalance and will be dropped from the Index if it no longer meets the Index criteria, including the required minimum of one-third of its revenue derived from solar business activities. The solar exposure scores for the parent and the spun-off company will also be reevaluated at the quarterly rebalance.

**Exchange Rate**

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.

**Currency of Calculation**

Each index is calculated in USD.

Index	Currency
MAC Global Solar Energy Index Price Return	USD
MAC Global Solar Energy Index Net Total Return	USD

**Index Calendar**

The Index will be calculated on any day where an index constituent is open for trading.

**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.

## Index Data

### Calculation Return Types

S&P DJI 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 DJI.

- Price Return (PR) versions are calculated without adjustments for regular cash dividends.
- Net Total Return (NTR) versions reinvest regular net cash dividends at the close of the ex-date with consideration for withholding taxes.

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

*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 DJI's Equity Indices Policies & Practices Methodology located at [www.spdji.com](http://www.spdji.com).*

*For more information on the calculation of return types, please refer to S&P DJI's Index Mathematics Methodology located at [www.spdji.com](http://www.spdji.com).*

### Base Date and History Availability

Index history availability, Launch Date, Base Date and Launch Value are shown in the table below:

Index	Launch Date	Base Date	History Start Date	Base Value
MAC Global Solar Energy Index Price Return	31-03-2008	31-03-2008	31-03-2008	1000
MAC Global Solar Energy Index Net Total Return	31-03-2008	31-03-2008	31-03-2008	1000

All information presented prior to the inception date ("Launch Date") is back-tested.

# Index Governance

## Index Committee

S&P DJI's SP MAC Custom Index Committee ("Index Committee") maintains the MAC Global Solar Energy Indices. The Index Committee meets at regular intervals. At each meeting, the Index Committee reviews matters that may affect the indices, including the Methodology, constituents and any significant market events. In addition, the Index Committee may revise index policy and procedures.

S&P DJI considers information regarding changes to the Indices and related matters to be potentially market moving and material; therefore, all Index Committee discussions are confidential.

*For information on Quality Assurance and Internal Reviews of Methodology, please refer to S&P DJI's Equity Indices Policies & Practices document located here [www.spdji.com](http://www.spdji.com).*

# 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 MAC and authorized clients. Any unusual treatment of a corporate action or short notice of an event may be communicated via email to clients.

The index Methodology is reviewed by the Index Committee as part of the regular index rebalancing process, as well as on at least an annual basis, to ensure that the Methodology is being applied consistently and allows the index to achieve its stated objective. These reviews may highlight situations where changes to the Methodology are necessary to reflect changes in the underlying market. Any material changes to the index Methodology are subject to public consultation and are announced ahead of time via S&P DJI's website and/or via email.

*For more information, please refer to the Announcements section of S&P DJI's Equity Indices Policies & Practices document located here [www.spdji.com](http://www.spdji.com)*

## Pro-forma Files

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

## Holiday Schedule

Each index is calculated on each day that is an Index Business Day.

## Rebalancing

The Index Committee may change the date of a given rebalancing for reasons including market holidays occurring on 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 DJI's Equity Indices Policies & Practices document located here [www.spdji.com](http://www.spdji.com).

**Recalculation Policy**

For information on the recalculation policy, please refer to S&P DJI's Equity Indices Policies & Practices document located here [www.spdji.com](http://www.spdji.com).

*For information on Calculations and Pricing Disruptions, Expert Judgment and Data Hierarchy, please refer to S&P DJI's Equity Indices Policies & Practices document located here [www.spdji.com](http://www.spdji.com).*

## Index Dissemination

Index levels are available through S&P DJI's [www.spdji.com](http://www.spdji.com), and major quote vendors (see codes below).

### Tickers

The table below lists headline indices covered by this document.

Index	Return Type	Bloomberg
MAC Global Solar Energy Index Price Return	Price Return	-
MAC Global Solar Energy Index Net Total Return	Net Total Return	SUNIDX

### SFTP

Daily stock level and index data are available via SFTP subscription.

### Web site

For further information, please refer to <https://www.spglobal.com/spdji/en/custom-index-calculations/mac-indexing-llc/all>

## Appendix I – Defined Terms

“**Index Business Day**” means any day where an index constituent is open for trading.

“**Data Reference Date**” has the meaning given to such term in Index Construction.

“**Rebalancing Date**” has the meaning given to such term in Index Construction.

“**Rebalancing Reference Date**” has the meaning given to such term in Index Maintenance.

“**Rebalance Month**” has the meaning given to such term in Index Construction.

## Appendix II – Methodology Changes

In calculating and determining the value of each index, S&P DJI will, subject as provided below, use the Methodology and its interpretation of such Methodology shall be conclusive and binding. While S&P DJI uses the Methodology described in this document to calculate each index, no assurance can be given that market, regulatory, juridical, financial, fiscal or other circumstances (including, but not limited to, any changes to or any suspension or termination of any constituent of an index or any other events affecting transactions on the same or similar terms to any constituent of an index) will not arise that would, in the view of S&P DJI, necessitate or make desirable a modification of or change to such Methodology (including, but without limitation, a change in the frequency of calculation of any index level) in order for each index to continue being calculated and determined notwithstanding the relevant circumstances S&P DJI shall be entitled to make any such modification or change in its sole discretion.

S&P DJI shall be entitled to make such modifications and/or changes to the Methodology as it, in its sole discretion, deems necessary or desirable, including (without limitation):

- i. To correct any manifest error or proven error or to cure, correct or supplement any ambiguity or defective provision contained in this Methodology; and/or
- ii. To preserve the intended index objective, where such modification and/or change is of a formal, minor or technical nature; and/or
- iii. To take into account any change in the terms (whether in relation to settlement mechanics or otherwise) on which relevant instruments concerning any index constituent are traded.

In deciding what is necessary or desirable, S&P DJI will consider and/or take into account what it determines to be the intended objective of the index.

In making any such modifications, however S&P DJI will (x) ensure that such modifications or changes pursuant to this section “Change in Methodology” will result in a methodology that, in S&P DJI’s sole determination, is consistent with the intended objective of the Methodology described herein and (y) limit any such modification or change to the index rules and/or method of calculating any index Level(s).

All proposals to discontinue an index are assessed to determine any potential impact on the market. S&P DJI may at its option, consult with market participants regarding the index termination.

Methodology changes since 24th of May 2021 are as follows:

Change	Effective Date (After Close)	Methodology	
		Previous	Updated
Eligibility Criteria: Governance Screen	31-05-2023	At the annual reconstitution of the Solar Stock Universe List, stocks with an S&P Global Governance & Economic Score of zero as of the April 30 reference date shall be excluded from the Solar Stock Universe List and therefore cannot qualify for inclusion in the index. If	At each quarterly rebalance, stocks with an S&P Global Governance & Economic Score of less than 5.00 as of the quarterly Data Reference Date shall be excluded or dropped from the Index, whether that is an existing constituent or a stock that is being considered at the quarterly rebalance as a new addition to the Index. Any stock that does not have an S&P Global Governance & Economic Score due to lack of coverage by S&P Global shall be excluded or dropped from the Index until



		<p>a stock is not covered by S&amp;P Global and does not have a S&amp;P Global Governance &amp; Economic score, that stock shall be included in the Solar Stock Universe List and therefore qualifies for inclusion in the index, provided the stock meets the eligibility criteria detailed above. Any IPOs or other stocks that may qualify to be added to the Solar Stock Universe List at the quarterly index rebalance shall be included in the Solar Stock Universe List if the stock does not have an S&amp;P Global Governance and Economic score but shall be excluded from the Solar Stock Universe List if the stock has a current S&amp;P Global Governance &amp; Economic score of zero.</p>	<p>that Score becomes available. Any IPOs or other stocks that may qualify to be added to the Solar Stock Universe List at the quarterly rebalance shall not be added to the Index as a constituent if the stock does not have an S&amp;P Global Governance and Economic score, or if the stock has a current S&amp;P Global Governance &amp; Economic score of less than 5.00. The screen for the S&amp;P Global Governance &amp; Economic Score shall be applied only at quarterly rebalances, not at the annual reconstitution of the Solar Stock Universe List.</p>																										
Business Involvement Screens	31-05-2023	NA	<p>The Business Involvement Screen will exclude (1) any companies with more than zero direct dollar revenue exposure to specific business involvement categories, or (2) companies that own 20% or more of a subsidiary company that itself has more than zero-dollar revenue exposure to these specific business involvement categories as detailed in the below table. Any stock that does not have Business Involvement Screen coverage data will be included in the Index if it otherwise qualifies. The S&amp;P Business Involvement Screens shall be applied only at quarterly rebalances, not at the annual reconstitution of the Solar Stock Universe List. The Business Involvement Screens are detailed in the table below:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Exclusion Type</th> <th style="text-align: left;">S&amp;P Global Involvement Type</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Consumer Products &amp; Services</td> <td>Adult Entertainment (Production; Retail and Distribution)</td> </tr> <tr> <td>Alcohol (Production; Related Products and Services; Retail and Distribution)</td> </tr> <tr> <td>Gambling (Specialized Equipment; Operations; Supporting Products and Services)</td> </tr> <tr> <td>Tobacco (Production; Related Products and Services; Retail and Distribution)</td> </tr> <tr> <td rowspan="10">Defense &amp; Weapons</td> <td>Anti-Personnel Mines (Customized Weapons; Related Products and Services)</td> </tr> <tr> <td>Biological and Chemical Weapons (Customized Weapons; Related Products and Services)</td> </tr> <tr> <td>Blinding Laser Weapons (Customized Weapons; Related Products and Services)</td> </tr> <tr> <td>Cluster Munitions (Customized Weapons; Related Products and Services)</td> </tr> <tr> <td>Depleted Uranium (Customized Weapons; Related Products and Services)</td> </tr> <tr> <td>Incendiary Weapons</td> </tr> <tr> <td>Military Contracting - Integral Military Weapons</td> </tr> <tr> <td>Military Contracting - Weapons Related</td> </tr> <tr> <td>Nuclear Weapons (Customized Weapons; Related Products and Services)</td> </tr> <tr> <td>Small Arms (Production of Small Arms Weapons for Non-Civilian Use; Retail and Distribution of Small Arms Weapons; Production of Key Components; Production of Small Arms Weapons for Civilian Use)</td> </tr> <tr> <td rowspan="3">Energy &amp; Fossil Fuels</td> <td>Artic Drilling (Extraction and/or Production)</td> </tr> <tr> <td>Coal (Metallurgical Coal Mining; Thermal Coal Mining; Manufacturing Coal Products)</td> </tr> <tr> <td>Nuclear (Transmission and Distribution; Generation; Supporting Products and Services)</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Oil Sands or Tar Sands (Extraction and/or Production)</td> </tr> </tbody> </table>	Exclusion Type	S&P Global Involvement Type	Consumer Products & Services	Adult Entertainment (Production; Retail and Distribution)	Alcohol (Production; Related Products and Services; Retail and Distribution)	Gambling (Specialized Equipment; Operations; Supporting Products and Services)	Tobacco (Production; Related Products and Services; Retail and Distribution)	Defense & Weapons	Anti-Personnel Mines (Customized Weapons; Related Products and Services)	Biological and Chemical Weapons (Customized Weapons; Related Products and Services)	Blinding Laser Weapons (Customized Weapons; Related Products and Services)	Cluster Munitions (Customized Weapons; Related Products and Services)	Depleted Uranium (Customized Weapons; Related Products and Services)	Incendiary Weapons	Military Contracting - Integral Military Weapons	Military Contracting - Weapons Related	Nuclear Weapons (Customized Weapons; Related Products and Services)	Small Arms (Production of Small Arms Weapons for Non-Civilian Use; Retail and Distribution of Small Arms Weapons; Production of Key Components; Production of Small Arms Weapons for Civilian Use)	Energy & Fossil Fuels	Artic Drilling (Extraction and/or Production)	Coal (Metallurgical Coal Mining; Thermal Coal Mining; Manufacturing Coal Products)	Nuclear (Transmission and Distribution; Generation; Supporting Products and Services)				Oil Sands or Tar Sands (Extraction and/or Production)
Exclusion Type	S&P Global Involvement Type																												
Consumer Products & Services	Adult Entertainment (Production; Retail and Distribution)																												
	Alcohol (Production; Related Products and Services; Retail and Distribution)																												
	Gambling (Specialized Equipment; Operations; Supporting Products and Services)																												
	Tobacco (Production; Related Products and Services; Retail and Distribution)																												
Defense & Weapons	Anti-Personnel Mines (Customized Weapons; Related Products and Services)																												
	Biological and Chemical Weapons (Customized Weapons; Related Products and Services)																												
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	Nuclear (Transmission and Distribution; Generation; Supporting Products and Services)																												
			Oil Sands or Tar Sands (Extraction and/or Production)																										

## Appendix III – EU ESG Disclosure

### EU Required ESG Disclosures

EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY <sup>1</sup>			
1.	Name of the benchmark administrator.	S&P DJI Netherlands B.V.	
2.	Underlying asset class of the ESG benchmark. <sup>2</sup>	Equity	
3.	Name of the benchmark or family of benchmarks.	<a href="#">MAC Equity Index Family Benchmark Statement</a>	
4.	Do any of the indices maintained by this methodology take into account ESG factors?	Yes	
5.	If the response to (4) is “Yes” the indices stated here take into account ESG factors.	For a list of the benchmarks within this family that take in account ESG factors, please refer to the <a href="#">SPDJI Custom BA for MAC Regulatory Report</a>  There is only the index below that is an ESG benchmark governed by this methodology:  MAC Global Solar Energy Index	
6.	Where the response to (4) is ‘Yes’, the section below lists those ESG factors that are taken into account by the ESG indices governed by the methodology, including those ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816.		
		<b>ESG Factor<sup>3</sup></b>	<b>S&amp;P DJI ESG Factor</b>
6.a	List of environmental factors considered	N/A	Business Activities: <i>Power Generation</i>
		N/A	Business Activities: <i>Fossil Fuel Extraction</i>
			<b>Comment</b>
			Exclusion. For more information, please refer to the ‘Eligibility Criteria’ section of the Index methodology.
			Exclusion. For more information, please refer

<sup>1</sup> The information contained in this Appendix is intended to meet the requirements of the European Union Commission Delegated Regulation (EU) 2020/1817 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the minimum content of the explanation of how environmental, social and governance factors are reflected in the benchmark methodology.

<sup>2</sup> The ‘underlying assets’ are defined in European Union Commission Delegated Regulation (EU) 2020/1816 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the explanation in the benchmark statement of how environmental, social and governance factors are reflected in each benchmark provided and published.

<sup>3</sup> ‘ESG factors’ are defined in Annex II of European Union Commission Delegated Regulation (EU) 2020/1816 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the explanation in the benchmark statement of how environmental, social and governance factors are reflected in each benchmark provided and published.

**EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY<sup>1</sup>**

			to the <i>'Eligibility Criteria'</i> section of the Index methodology.
	N/A	Business Involvement Screens: Arctic Drilling (Extraction and/or Production)	Exclusion. For more information, please refer to the <i>'Eligibility Criteria'</i> section of the Index methodology.
	N/A	Business Involvement Screens: Coal (Metallurgical Coal Mining; Thermal Coal Mining; Manufacturing Coal Products)	Exclusion. For more information, please refer to the <i>'Eligibility Criteria'</i> section of the Index methodology.
	N/A	Business Involvement Screens: Nuclear (Transmission and Distribution; Generation; Supporting Products and Services)	Exclusion. For more information, please refer to the <i>'Eligibility Criteria'</i> section of the Index methodology.
	N/A	Business Involvement Screens: Oil Sands or Tar Sands (Extraction and/or Production)	Exclusion. For more information, please refer to the <i>'Eligibility Criteria'</i> section of the Index methodology.
	N/A	Business Involvement Screens: Shale Oil and Gas (Extraction and/or Production)	Exclusion. For more information, please refer to the <i>'Eligibility Criteria'</i> section of the Index methodology.
	N/A	Business Involvement Screens: Thermal Coal (Transmission and Distribution; Generation; Supporting Products and Services)	Exclusion. For more information, please refer to the <i>'Eligibility Criteria'</i> section of the Index methodology.
	N/A	Business Involvement Screens: Ultra Deep Sea Drilling (Extraction and/or Production)	Exclusion. For more information, please refer to the <i>'Eligibility Criteria'</i> section of the Index methodology.
<b>6.b List of social factors considered</b>	N/A	Business Involvement Screens: Adult Entertainment (Production; Retail and Distribution)	Exclusion. For more information, please refer to the <i>'Eligibility Criteria'</i> section of the Index methodology.
	N/A	Business Involvement Screens:	Exclusion. For more information, please refer to the <i>'Eligibility Criteria'</i>

EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY <sup>1</sup>			
		Alcohol (Production; Related Products and Services; Retail and Distribution)	section of the Index methodology.
	N/A	Business Involvement Screens: Gambling (Specialized Equipment; Operations; Supporting Products and Services)	Exclusion. For more information, please refer to the 'Eligibility Criteria' section of the Index methodology.
	N/A	Business Involvement Screens: Tobacco (Production; Related Products and Services; Retail and Distribution)	Exclusion. For more information, please refer to the 'Eligibility Criteria' section of the Index methodology.
	N/A	Business Involvement Screens: Anti-Personnel Mines (Customized Weapons; Related Products and Services)	Exclusion. For more information, please refer to the 'Eligibility Criteria' section of the Index methodology.
	N/A	Business Involvement Screens: Biological and Chemical Weapons (Customized Weapons; Related Products and Services)	Exclusion. For more information, please refer to the 'Eligibility Criteria' section of the Index methodology.
	N/A	Business Involvement Screens: Blinding Laser Weapons (Customized Weapons; Related Products and Services)	Exclusion. For more information, please refer to the 'Eligibility Criteria' section of the Index methodology.
	N/A	Business Involvement Screens: Cluster Munitions (Customized Weapons; Related Products and Services)	Exclusion. For more information, please refer to the 'Eligibility Criteria' section of the Index methodology.
	N/A	Business Involvement Screens: Depleted Uranium (Customized Weapons; Related Products and Services)	Exclusion. For more information, please refer to the 'Eligibility Criteria' section of the Index methodology.
	N/A	Business Involvement Screens: Incendiary Weapons	Exclusion. For more information, please refer to the 'Eligibility Criteria' section of the Index methodology.

EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY <sup>1</sup>			
			section of the Index methodology.
	N/A	Business Involvement Screens: Military Contracting - Integral Military Weapons	Exclusion. For more information, please refer to the 'Eligibility Criteria' section of the Index methodology.
	N/A	Business Involvement Screens: Military Contracting - Weapons Related	Exclusion. For more information, please refer to the 'Eligibility Criteria' section of the Index methodology.
	N/A	Business Involvement Screens: Nuclear Weapons (Customized Weapons; Related Products and Services)	Exclusion. For more information, please refer to the 'Eligibility Criteria' section of the Index methodology.
	N/A	Business Involvement Screens: Small Arms (Production of Small Arms Weapons for Non-Civilian Use; Retail and Distribution of Small Arms Weapons; Production of Key Components; Production of Small Arms Weapons for Civilian Use)	Exclusion. For more information, please refer to the 'Eligibility Criteria' section of the Index methodology.
<b>6.c</b> <b>List of governance factors considered.</b>	N/A	S&P Global Governance & Economic Score	Exclusion. For more information, please refer to the 'Eligibility Criteria' section of the Index methodology.
<b>7.</b>	<b>Data and standards used.</b>		
<b>7.a</b>	<b>Data sources, verification and quality of data.</b>	The data sets are defined as either: <ul style="list-style-type: none"> <li>- <u>Reported</u>: All data in the dataset are provided as disclosed by companies, or as stated in the public domain.</li> <li>- <u>Modeled</u>: All data are derived using a proprietary modeling process with only proxies used in the creation of the dataset.</li> <li>- <u>Reported and Modeled</u>: The dataset is either a mix of reported and modeled data or is derived by the vendor using reported data/information in a proprietary scoring or determination process.</li> </ul> The index methodology uses the following ESG data sets.	
	<b>Data Source:</b>	<b>Data Set:</b>	
	<b>Trucost (part of S&amp;P Global)</b>	Business Activities (Reported and Modeled) – Product involvement data is provided by Trucost.	

<b>EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL &amp; GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY<sup>1</sup></b>		
	(external data source)	<i>For more information please refer to <a href="http://www.trucost.com/">http://www.trucost.com/</a>.</i>
	<b>S&amp;P Global Sustainable<sup>1</sup> (part of S&amp;P Global)</b> (external data source)	<p>S&amp;P Global Governance and Economic score (Reported and Modeled) – The S&amp;P Global Governance and Economic scores are built from the ‘Corporate Sustainability Assessment’ (CSA). A company’s S&amp;P Global Governance and Economic score may either be calculated from data received directly by a company completing the comprehensive assessment (together with supporting documents), or – in the absence of this – by using publicly available information.</p> <p><i>For more information about the S&amp;P Global ESG scores please refer to <a href="https://www.spglobal.com/sustainable1/esg-scores">https://www.spglobal.com/sustainable1/esg-scores</a></i></p> <p>S&amp;P Global Business Involvement Screens (Reported and Modeled) – The dataset tracks the business activities, products and services that companies are involved in. The S&amp;P Global Business Involvement Screens provide detailed assessments of common areas of investor concern pinpointing the precise level of involvement, from production to operations and distribution, to inform values-based investment strategies.</p> <p><i>For more information about S&amp;P Global’s Business Involvement Screens, please refer to <a href="https://www.spglobal.com/esg/solutions/portfolio-analytics-business-involvement-analytics">https://www.spglobal.com/esg/solutions/portfolio-analytics-business-involvement-analytics</a></i></p>
<b>7.b</b>	<b>Reference standards and index methodology:</b>	Whilst there are no specific reference standards that apply to the data, where possible, S&P DJI uses international sustainability disclosure frameworks such as, SASB, GRI, UN Global Compact and the recommendations of the Financial Stability Board’s Task Force for Climate-related Financial Disclosures as published in the 2017 Final Report.
	<b>Appendix latest update:</b>	April 2023
	<b>Appendix first publication:</b>	May 2021



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