

MSCI High Dividend Yield Low Carbon SRI Screened Select Indexes Methodology

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1 Introduction

The MSCI High Dividend Yield Low Carbon SRI Screened Select Indexes (herein, the 'Indexes') are designed to represent the performance of a strategy that seeks systematic integration of environmental, social and governance (ESG) norms and maximizes its exposure to the Dividend Yield factor.

The Indexes¹ are constructed by selecting constituents of market capitalization weighted indexes (herein, the 'Parent Indexes') and applying an optimization process that aims to maximize the exposure to the Dividend Yield factor, limit the Tracking Error relative to the Parent Indexes, reduce the carbon-equivalent exposure to CO2 and other Green House Gases (GHG), reduce the exposure to active fossil fuel sector and achieve an industry-adjusted ESG score that is at least equal to that of the Parent Indexes.

¹The Indexes are governed by a set of methodology and policy documents ("Methodology Set"), including the present index methodology document. The Methodology Set for the Indexes can be accessed from MSCI's webpage https://www.msci.com/index-methodology in the section 'Search Methodology by Index Name or Index Code'.

The Methodology Set includes a document 'ESG Factors in Methodology' that contains the list of environmental, social, and governance factors considered, and how they are applied in the methodology (e.g., selection, weighting or exclusion).



2 Constructing the MSCI High Dividend Yield Low Carbon SRI Screened Select Indexes

Constructing the MSCI High Dividend Yield Low Carbon SRI Screened Select Indexes involve the following steps:

- Defining the Parent Index
- Defining the exclusion criteria
- Defining the security selection and weighting
- Determining the optimized index

The steps mentioned above are defined in detail in the subsequent sections.

2.1 APPLICABLE UNIVERSE

The Applicable Universe of the Indexes includes all the constituents of their respective Parent Index. For further details regarding the Parent Index, kindly refer to Appendix V.

2.2 ELIGIBLE UNIVERSE

The Eligible Universe comprises of all securities from the Applicable Universe that are excluded based on the below criteria:

- Companies assessed as having involvement in ESG controversies that are classified as Red Flags (MSCI ESG Controversy Score of 0). A Red Flag indicates an ongoing, Very Severe ESG controversy implicating a company directly through its actions, products, or operations.
- Companies assessed as having involvement in environmental controversies that are classified as Red (MSCI Environmental Controversy Score of 0) or Orange Flags (score of 1).
 - A Red Flag indicates an ongoing, Very Severe ESG controversy implicating a company directly through its actions, products, or operations.
 - An Orange Flag indicates an ongoing Severe ESG controversy implicating a company directly, or a Very Severe ESG controversy that is either partially resolved or indirectly attributed to the company's actions, products, or operations.
- Securities with an ESG Rating of 'CCC'



 Securities that breach any of the values and climate change-based exclusions criteria detailed in Section 2.2.1.

Note on Unrated Securities or Securities with Missing Coverage:

Companies that are not assessed on MSCI ESG Research's ESG Controversies are excluded from the Final Universe. Companies that are not assessed on MSCI ESG Research's ESG Ratings are excluded from the final universe.

2.2.1. VALUES AND CLIMATE CHANGE-BASED EXCLUSIONS

Companies that are involved in specific businesses, which are associated with negative environmental and/or social impact are ineligible for inclusion in the Index. The Indexes use MSCI ESG Business Involvement Screening Research and MSCI Climate Change Metrics to identify companies that are involved in the following business activities. Please refer to Appendix I for more details on these criteria.

- Controversial Weapons
- Civilian Firearms
- Nuclear Weapons
- Tobacco
- Adult Entertainment
- Alcohol
- Conventional Weapons
- Gambling
- Genetically Modified Organisms
- Nuclear Power
- Fossil Fuel Reserves Ownership
- Fossil Fuel Extraction
- Thermal Coal Power



2.3 SECURITY SELECTION AND WEIGHTING

Securities in the Eligible Universe are selected and weighted following an optimization-based approach described below:

At each Semi-Annual Index Review, the Indexes are constructed using an optimization process that aims to maximize the Dividend Yield score while controlling the ex-ante Tracking Error relative to the Parent Index at the time of rebalancing, subject to the following constraints:

- Climate and other environmental or social objectives constraints detailed in Table 1
- 2. Diversification objectives constraints detailed in Table 2

The definitions of the target metrics for the optimization are detailed in Appendix II.

Table 1: Constraints imposed to meet the climate and other ESG objectives

No.	Climate and Other ESG Objectives	
1.	Minimum reduction in Greenhouse Gas (GHG) Intensity relative to EVIC (Scope 1+2+3²) relative to the Parent Index	30%
2.	Minimum reduction in GHG Intensity relative to Sales (Scope 1+2+3³) relative to the Parent Index	30%
3.	Minimum reduction in Fossil Fuel exposure ⁴ relative to the Parent Index	50%
4.	Minimum reduction in Water Emissions Intensity relative to EVIC relative to Parent Index ⁵	>= 0%
5.	Minimum reduction in Hazardous Waste Intensity relative to EVIC relative to Parent Index ⁶	>= 0%

² Prior to the May 2020 Index Review of the Indexes, the Weighted Average Carbon Emissions Intensity relative to EVIC has been calculated based on Scope 1+2 Emissions.

³ Prior to the May 2020 Index Review of the Indexes, the Weighted Average Carbon Emissions Intensity relative to sales has been calculated based on Scope 1+2 Emissions.

⁴ Company's exposure to fossil fuels related activities, including extraction, processing, storage and transportation of petroleum products, natural gas, and thermal and metallurgical coal This data point is used in index construction from March 2021 onwards.

⁵ Minimum Reduction in Water Emissions Intensity constraint is effective from May 2021 Index Review.

⁶ Minimum Reduction in Hazardous Waste Intensity constraint is effective from May 2021 Index Review.



No.	Climate and Other ESG Objectives	
6.	Minimum increase in weighted average ESG Trend Score ⁷ relative to Parent Index	>= 0%
7.	Maximum Weight in securities with an ESG Rating of 'BB' or 'B'	15%
8.	Minimum increase in weighted average ESG Score relative to Parent Index	>=0%

Table 2: Constraints imposed to meet the diversification objectives

No.	Diversification Objective	
1.	The Grossed-up Dividend Yield of the Index as a multiple of Grossed-up Dividend Yield of the Parent Index	>=1.3x (soft constraint)
1.	The ex-ante Tracking Error of the Index, relative to the Parent Index	<= 5%
2.	Constituent Active Weight relative to the Parent Index	+/- 3%
3.	Security Weight as a multiple of its weight in the Parent Index	<= 10x
4.	Active Sector Weights relative to the Parent Index	+/-5%
5.	Country Weight as a multiple of its weight in the Parent Index (for country weight <= 2.5% in the Parent Index)	<= 3x
6.	Active Country Weights relative to the Parent Index (for country weight > 2.5% in the Parent Index)	+/-5%
7.	The exposure of the Index to the Barra style factors (Beta and Residual Volatilty) will be restricted relative to the Parent Index (measured in Standard Deviations)	<=0

⁷ The ESG Rating Trend indicates the rating change from previous to current in terms of the number of rating notches downgraded or upgraded. For example; +3 = three notch upgrade, -2 = two notch downgrade, 0 = maintain, and blank = new rating.



No.	Diversification Objective	
8.	The exposure of the Index to the Barra style factors (Earnings Quality, Investment Quality, and Profitability) will be restricted relative to the Parent Index (measured in Standard Deviations)	>=0.25
9.	The exposure of the Index to the Barra style factors (Earnings Variability and Leverage) will be restricted relative to the Parent Index (measured in Standard Deviations)	<=-0.25
10.	The exposure of the Index to the Barra style factors (Long-Term Reversal, Book-to-Price, Earnings Yield, Mid Capitalization, Size, Momentum, Growth and Liquidity) will be restricted relative to the Parent Index (measured in Standard Deviations)	+/- 0.25
11.	The minimum weight of an index constituent8	0.01%
12.	One Way Turnover	<= 20%
13.	Common Factor Risk Aversion	0.0015
14.	Specific Risk Aversion	0.015

During the Semi-Annual Index Review, in the event that there is no optimal solution that satisfies all the optimization constraints, the following constraints will be relaxed, until an optimal solution is found:

- Relax the one-way index turnover constraint in steps of 2% up to 30%
- Relax the security weight multiple constraint in steps of 2x to 20x
- Relax the maximum weight of ESG Rating of 'B' and 'BB' securities constraint in steps of 1% to 20%
- The one-way index turnover constraint, the security weight multiple constraint and the maximum weight of ESG Rating of 'B' and 'BB' securities constraint are alternately relaxed until a feasible solution is achieved.

In the event that no optimal solution is found after the above constraint relaxations are exhausted, the Index will not be rebalanced for that Semi-Annual Index Review.

 $^{^8}$ The weights of securities below 0.01% after the optimization process are removed and the weight of removed securities are redistributed in proportion of optimized weights in the remaining securities



2.4 DETERMINING THE OPTIMIZED INDEX

The Indexes are constructed using the Barra Open Optimizer in combination with the relevant Barra Equity Model. The optimization uses the universe of eligible securities and the specified optimization objectives and constraints to determine the constituents of and the weights of constituents in the Indexes. The optimization is performed from a base currency perspective and does not allow short selling of securities. The default currency is the US Dollar.

Please refer to Appendix III and IV for more details.



Maintaining the Indexes 3

SEMI-ANNUAL INDEX REVIEWS 3.1

The MSCI Indexes are rebalanced on a semi-annual basis, usually as of the close of the last business day of May and November, coinciding with the May and November Index Reviews of the MSCI Global Investable Market Indexes. Barra Equity Model data as of the day before the rebalancing day is used.

In general, MSCI uses MSCI ESG Research data (including MSCI ESG Ratings, MSCI ESG Controversies, MSCI Business Involvement Screening Research and MSCI Climate-change metrics) as of the end of the month preceding the Index Reviews for the rebalancing of the Index. For some securities, such data may not be published by MSCI ESG Research by the end of the month preceding the Index Review. For such securities, MSCI will use ESG data published after the end of month, when available, for the rebalancing of the Index.

The pro forma Indexes are in general announced nine business days before the effective date.



3.2 ONGOING EVENT RELATED CHANGES

The general treatment of corporate events in the Indexes aim to minimize turnover outside of Index Reviews. The methodology aims to appropriately represent an investor's participation in an event based on relevant deal terms and pre-event weighting of the index constituents that are involved. Further, changes in index market capitalization that occur as a result of corporate event implementation will be offset by a corresponding change in the Variable Weighting Factor (VWF) of the constituent.

Additionally, if the frequency of Index Reviews in the Parent Index is greater than the frequency of Index Reviews in the Indexes, the changes made to the Parent Index during intermediate Index Reviews will be neutralized in the Indexes.

The following section briefly describes the treatment of common corporate events within the Indexes.

No new securities will be added (except where noted below) to the Index between Index Reviews. Parent Index deletions will be reflected simultaneously.

EVENT TYPE	EVENT DETAILS
New additions to the Parent Index	A new security added to the parent index (such as IPO and other early inclusions) will not be added to the index.
Spin-Offs	All securities created as a result of the spin-off of an existing Index constituent will be added to the Index at the time of event implementation. Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.
Merger/Acquisition	For Mergers and Acquisitions, the acquirer's post event weight will account for the proportionate amount of shares involved in deal consideration, while cash proceeds will be invested across the Index.



If an existing Index constituent is acquired by a non-Index constituent, the existing constituent will be deleted from the Index and the acquiring nonconstituent will not be added to the Index.

Changes in Security Characteristics

A security will continue to be an Index constituent if there are changes in characteristics (country, sector, size segment, etc.) Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.

Further detail and illustration regarding specific treatment of corporate events relevant to this Index can be found in the MSCI Corporate Events Methodology book under the sections detailing the treatment of events in Capped Weighted and Non-Market Capitalization Weighted indexes.

The MSCI Corporate Events methodology book is available at: https://www.msci.com/index-methodology.



4 MSCI ESG Research

The Indexes use company ratings and research provided by MSCI ESG Research. In particular, the Indexes use the following MSCI ESG Research products: MSCI ESG Ratings, MSCI ESG Controversies, MSCI ESG Business Involvement Screening Research and MSCI Climate Change Metrics.

For details on MSCI ESG Research's full suite of ESG products, please refer to: https://www.msci.com/esg-investing.

4.1 **MSCI ESG RATINGS**

MSCI ESG Ratings aim to measure entities' management of environmental, social and governance risks and opportunities. MSCI ESG Ratings are based on a sevenpoint scale from 'AAA' to 'CCC', indicating how an entity manages relevant key issues relative to industry peers.

The MSCI ESG Ratings methodology can be found at: https://www.msci.com/esgand-climate-methodologies.

4.2 MSCI ESG CONTROVERSIES

MSCI ESG Controversies provide assessments of controversies concerning the potential negative environmental, social, and/or governance impact of company operations, products and services. The evaluation framework used in MSCI ESG Controversies is designed to be consistent with international norms represented by the UN Declaration of Human Rights, the ILO Declaration on Fundamental Principles and Rights at Work, and the UN Global Compact. MSCI ESG Controversies Score falls on a 0-10 scale, with "0" being the most severe controversy.

The MSCI ESG Controversies methodology can be found in: https://www.msci.com/esg-and-climate-methodologies.

4.3 MSCI ESG BUSINESS INVOLVEMENT SCREENING RESEARCH

MSCI ESG Business Involvement Screening Research (BISR) aims to enable institutional investors to manage environmental, social and governance (ESG) standards and restrictions reliably and efficiently.

For more details on MSCI ESG Business Involvement Screening Research, please refer to http://www.msci.com/resources/factsheets/MSCI_ESG_BISR.pdf.



4.4 MSCI CLIMATE CHANGE METRICS

MSCI Climate Change Metrics provide climate data & tools to support institutional investors seeking to integrate climate risk & opportunities into their investment strategy and processes. This includes investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, alignment with temperature pathways and factoring climate change research into their risk management processes, in particular through climate scenario analysis for both transition and physical risks.

The dataset spans across the four dimensions of a climate strategy: transition risks, green opportunities, physical risks and 1.5° alignment.

For more details on MSCI Climate Change Metrics, please refer to https://www.msci.com/climate-change-solutions.



Appendix I: Values and Climate Change-based Exclusion Criteria

Companies whose activities meet the following business activities-based criteria, as evaluated by MSCI ESG Research, are excluded from the Indexes.

"Most Restrictive" screen applied

Controversial Weapons

 All companies with any tie to Controversial Weapons (cluster munitions, landmines, depleted uranium weapons, biological/chemical weapons, blinding lasers, non-detectable fragments and incendiary weapons), as defined by the methodology of the MSCI Global Ex-Controversial Weapons Indexes available at https://www.msci.com/index- methodology.

"Highly Restrictive" screen applied

Civilian Firearms

- All companies classified as "Producer" of firearms and small arms ammunitions for civilian markets. It does not include companies that cater to the military, government, and law enforcement markets.
- o All companies deriving 5% or more aggregate revenue from the production and distribution (wholesale or retail) of firearms or small arms ammunition intended for civilian use.

Nuclear Weapons

- All companies that manufacture nuclear warheads and/or whole nuclear missiles.
- All companies that manufacture components that were developed or are significantly modified for exclusive use in nuclear weapons (warheads and missiles).
- All companies that manufacture or assemble delivery platforms that were developed or significantly modified for the exclusive delivery of nuclear weapons.



- o All companies that provide auxiliary services related to nuclear weapons.
- All companies that manufacture components that were not developed or not significantly modified for exclusive use in nuclear weapons (warheads and missiles) but can be used in nuclear weapons.
- All companies that manufacture or assemble delivery platforms that were not developed or not significantly modified for the exclusive delivery of nuclear weapons but have the capability to deliver nuclear weapons.
- All companies that manufacture components for nuclear-exclusive delivery platforms.

Tobacco

- o All companies classified as a "Producer".
- All companies deriving 5% or more aggregate revenue from the production, distribution, retail, supply and licensing of tobacco-related products.

"Moderately Restrictive" screen applied

Adult Entertainment

- All companies deriving 5% or more revenue from the production of adult entertainment materials.
- All companies deriving 15% or more aggregate revenue from the production, distribution and retail of adult entertainment materials.

Alcohol

- All companies deriving 5% or more revenue from the production of alcohol-related products.
- All companies deriving 15% or more aggregate revenue from the production, distribution, retail and supply of alcohol-related products.
- Conventional Weapons (applicable to all Parent Indexes except MSCI EMU Index)



- All companies deriving 5% or more revenue from the production of conventional weapons and components.
- All companies deriving 5% or more aggregate revenue from weapons systems, components, and support systems and services.

Conventional Weapons (applicable to MSCI EMU Index only)

- All companies deriving any revenue from the production of conventional weapons and components.
- All companies deriving any aggregate revenue from weapons systems, components, and support systems and services.

Gambling

- All companies deriving 5% or more revenue from ownership of operation of gambling-related business activities.
- All companies deriving 15% or more aggregate revenue from gamblingrelated business activities.

Genetically Modified Organisms (GMO)

 All companies deriving 5% or more revenue from activities like genetically modifying plants, such as seeds and crops, and other organisms intended for agricultural use or human consumption.

Nuclear Power

- All companies generating 5% or more of their total electricity from nuclear power in a given year.
- All companies that have 5% or more of installed capacity attributed to nuclear sources in a given fiscal year.
- All companies deriving 15% or more aggregate revenue from nuclear power activities.

No specific restrictiveness level applied

Fossil Fuel Reserves Ownership



All companies with evidence of owning proven & probable coal reserves and/or proven oil and natural gas reserves used for energy purposes, as defined by the methodology of the MSCI Global Ex Fossil Fuels Indexes available at https://www.msci.com/index-methodology.

Fossil Fuel Extraction

- All companies deriving any revenue (either reported or estimated) from thermal coal mining or unconventional oil and gas extraction.
- Thermal Coal Mining: Revenue from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties. It does not cover revenue from metallurgical coal; coal mined for internal power generation (e.g. in the case of vertically integrated power producers); intra-company sales of mined thermal coal; and revenue from coal trading.
- Unconventional Oil & Gas Extraction: Revenue from oil sands, oil shale (kerogen-rich deposits), shale gas, shale oil, coal seam gas, and coal bed methane. It does not cover all types of conventional oil and gas production including Arctic onshore/offshore, deep water, shallow water and other onshore/offshore.

Thermal Coal Power

 All companies deriving 5% or more revenue (either reported or estimated) from thermal coal-based power generation.



Appendix II: Calculation of Target Metrics

Calculation of GHG Intensity relative to EVIC

For Parent Index constituents where Scope 1+2+3 Emissions Intensity is not available, the average Scope 1+2+3 Emissions Intensity relative to EVIC of all the constituents of the MSCI ACWI in the same GICS®9 Industry Group in which the constituent belongs to is used.

Security Level GHG Intensity relative to EVIC =

Scope
$$1 + 2 + 3$$
 Carbon Emissions

Enterprise Value + Cash(in M \$)

Weighted Average GHG Intensity relative to EVIC of the Parent Index = \sum (Weight in Parent Index * Security Level GHG Intensity relative to EVIC)

Weighted Average GHG Intensity relative to EVIC of the Optimized Index =

$$\sum$$
 (Index Weight * Security Level GHG Intensity relative to EVIC)

Calculation of GHG Intensity relative to Sales

For Parent Index constituents where the Scope 1+2+3 Emissions Intensity is not available, the average Scope 1+2+3 Emissions Intensity relative to Sales of all the constituents of the MSCI ACWI in the same GICS Industry Group in which the constituent belongs to is used.

Security Level GHG Intensity relative to Sales =

$$\frac{Scope\ 1 + 2 + 3\ Carbon\ Emissions}{Sales\ (in\ M\$)}$$

Weighted Average GHG Intensity relative to Sales of the Parent Index = (Weight in Parent Index * Security Level GHG Intensity relative to Sales)

⁹ GICS, the Global Industry Classification Standard, jointly developed by MSCI Inc. and S&P Global



Weighted Average GHG Intensity relative to Sales of the Optimized Index =

 $\sum_{i} (Index\ Weight *\ Security\ Level\ GHG\ Intensity\ relative\ to\ Sales)$

Calculation of Water Emissions Intensity relative to EVIC

Security Level Water Emissions Intensity =

Water Emissions (metric tons) Enterprise Value + Cash(in M\$)

Weighted Average Water Emissions Intensity of the Parent Index =

 \sum (Weight in Parent Index_i * Security Level Water Emissions Intensity) $\sum_{i=1}^{n} Weight in Parent Index_i$

Weighted Average Water Emissions Intensity of the Optimized Index =

 \sum (Index Weight_i * Security Level Water Emission Intensity) $\sum_{i=1}^{n} Index Weight_i$

Where:

i = index security with Water Emissions and EVIC available.

Calculation of Hazardous Water Intensity relative to EVIC

Security Level Hazardous Waste Intensity =

Hazardous waste (metric tons) Enterprise Value + Cash(in M\$)

Weighted Average Hazardous Waste Intensity of the Parent Index =

 \sum (Weight in Parent Index_i * Security Level Hazardous Waste Intensity) $\sum_{i=1}^{n}$ Weight in Parent Index_i

Weighted Average Hazardous Waste Intensity of the Optimized Index =



\sum (Index Weight_i * Security Level Hazrdous Waste Intensity) $\sum_{i=1}^{n} Index Weight_i$

Where:

i = index security with all Hazardous Waste and EVIC available.

Calculation of Weighted Average ESG Trend Score

Weighted Average ESG Trend Score of the Index =

 $\frac{\sum (Index\ Weight_i*ESG\ Trend\ Score\ of\ Security)}{\sum_{i=1}^{n}Index\ Weight_i}$

Where:

i = index security with ESG Trend Score available.

Calculation of Weighted Average ESG Score

Weighted Average ESG Score of the Index =

 \sum (Index Weight_i * ESG Score of Security) $\sum_{i=1}^{n} Index Weight_i$

Where:

i = index security with ESG Score available.



Appendix III: Barra Equity Model Used in The Optimization

The Indexes currently use an optimization setup using the MSCI Barra Global Equity Model for Long-Term Investors (GEMLTL).



Appendix IV: New release of Barra® Equity Model or **Barra® Optimizer**

A major new release of the relevant Barra Equity Model or Barra Optimizer may replace the former version within a suitable timeframe.



Appendix V: Parent Indexes

Table 3: Indexes and their corresponding Parent Indexes

No.	Index Name	Parent Index
1.	MSCI World High Dividend Yield Low Carbon SRI Screened Select Index	MSCI World Index
2.	MSCI USA High Dividend Yield Low Carbon SRI Screened Select Index	MSCI USA Index
3.	MSCI Europe High Dividend Yield Low Carbon SRI Screened Select Index	MSCI Europe Index
4.	MSCI EMU High Dividend Yield Low Carbon SRI Screened Select Index	MSCI EMU Index



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www.msci.com/index-regulation

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